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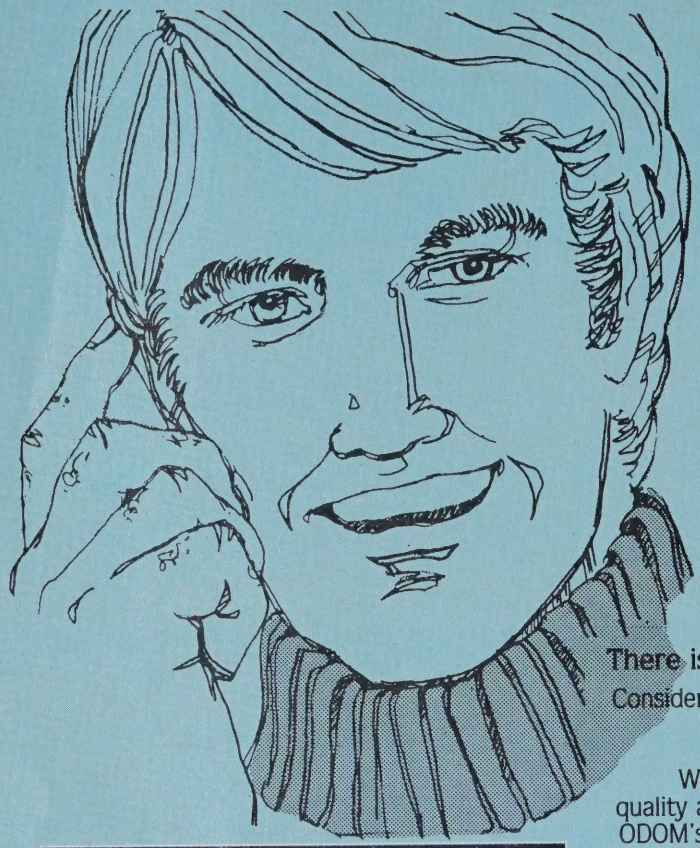

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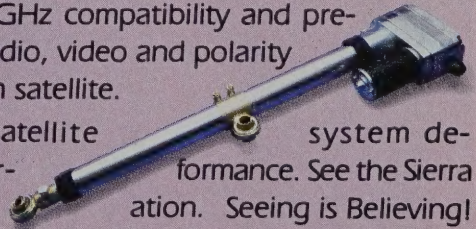

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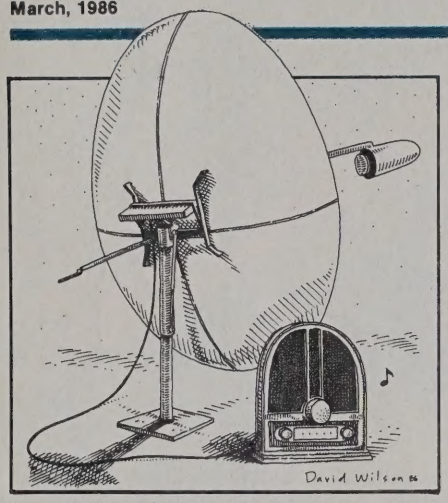
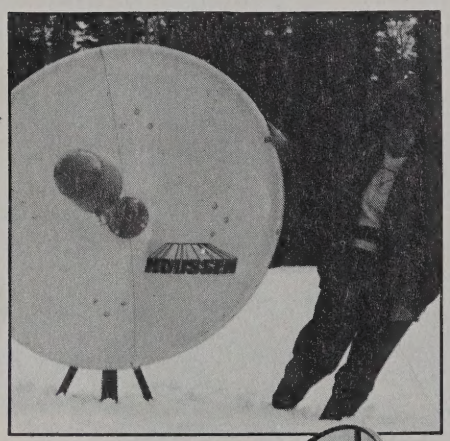
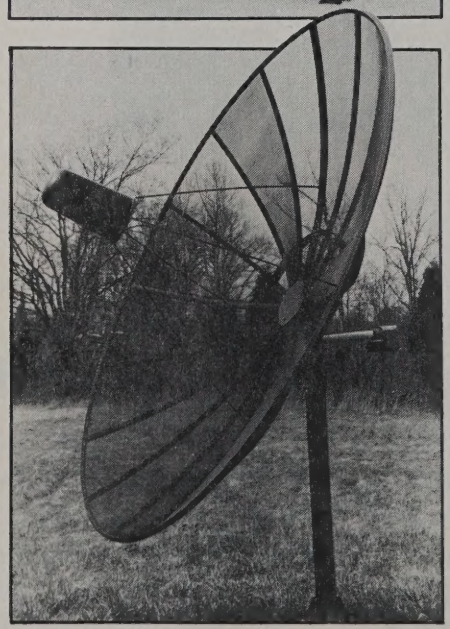
March, 1986







6 LETTERS TO THE EDITOR
Comments from our readers

8 EDITOR'S NOTEBOOK
Insights into the scrambling issue

10 TECH TALK
Helpful hints on buying and using a system

10 YOUR QUESTIONS ANSWERED
We help take the mystery out of satellite TV

14 BUYING SMART—SAVING $$$ WITH PREOWNED SYSTEMS
A low cost approach to owning a system

16 THE RENTAL OPTION—LOOK BEFORE YOU LEAP
A guide to renting or leasing a system

18 SATELLITE SCOOPS
Latest news about the earth station universe

22 SPECIAL REPORT: Ku AND YOU—THE INCREDIBLE SHRINKING SYSTEMS
Systems are becoming more compact every day

24 ELECTRONIC NEWSPAPER
There's a world of information hidden on satellite TV

28 HOT PRODUCT—CAGEY MOUNT
An old idea is updated for the hi tech satellite system

32 BIG SCREEN TV'S
New large screen TV's give you that in the theater feeling

34 SAT-TV'S—THE AUDIO BONUS
A guide to finding a wealth of audio only programming on satellite

36 CORDLESS SIGNAL PROCESSORS
A helpful device has been outlawed and we give you the inside story

40 DISHES BY MAIL
Pro's and con's of mail order buying

44 BUYER'S GUIDE— DISHES AND OTHER GADGETS
A sampling of some of the latest equipment on the market

48 SPORTS SPECTACULAR
Now you can find your favorite sporting event with our handy bonus chart

50 SUN BLIND! SOLAR OUTAGE
How to avoid damage to your system during this special time of year

52 FROM A TO Z ON SATELLITE TV
Top shows to watch during March

54 BOOK REVIEW—SATELLITE TV INSTALLATION AND TROUBLESHOOTING MANUAL
A book for all readers

56 SATELLITE TV GUIDE
All of the satellites, all of the networks

60 EARTH STATION OWNER OF THE MONTH—COUNTRY MUSIC SINGER RONNIE MILSAP
This blind singer loves to "watch" TV and tells why

70 PRODUCT REVIEWS
A look at what's hot and what's not

74 NEW PRODUCTS
The latest satellite equipment to make the most of satellite TV

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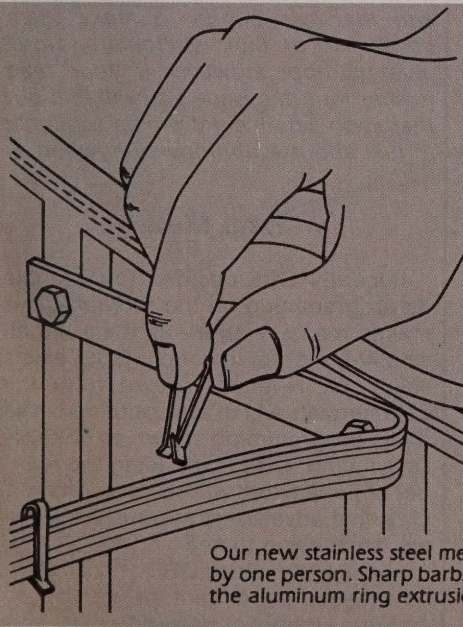
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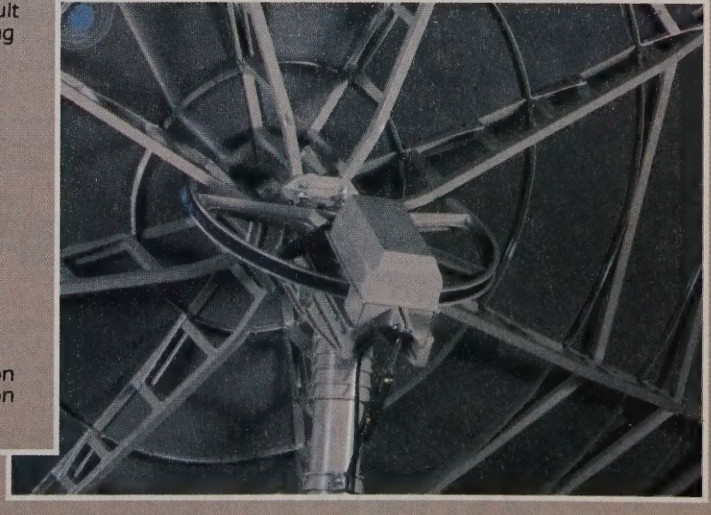

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LETTERS TO THE EDITOR

Blind Greed

I'm prompted to write this for two reasons. First, after having cable barely a month, their attitude towards the customer is disgusting. Second, Senator Gore's remarks in your DEC'85 issue, this further reduces my opinion of cable operators.

The numbers he quoted should be broadcast on national TV. A 1000% mark up? Wow, then how much am I getting zapped with? Unfortunately, my location doesn't allow for an earth station, otherwise I would.

It's too bad the cable operators have the dollar signs so much in their eyes. If they were to see past their greed, they'd realize the grass is greener on the other side.

By the way, I think Dr. Thrasher's idea of a network owned by home earth station owners is excellent.

Dennis Veatch
Denver, Colorado

Cable as it matured began to visualize themselves as another utility, just like the telephone, water and electric company's, and many cable systems have created a lot of ill will with this attitude. Home satellite TV bypasses the local cable operator and for the first time in their history they have some real competition—unlike the other utility which will never have competitors—and that has begun to make them conscious of their customers. Don't give up hope however. If your read further into this issue you will find out that soon satellite TV will be available to just about everybody everywhere.

Help Me!!

Recently CBS decided to scramble its programming on the satellites, this makes me very angry as it should all satellite system owners. CBS exists solely on revenues drawn from the commercials which are contained in all of the programming shown on CBS. By scrambling, CBS is reducing the number of people that will see the commercials that advertisers assume everyone will be allowed to see.

Fortunately, since CBS and all other advertising dependent networks rely on large amount of viewers to exist, this is the key to make them reverse their decision to scramble their programming. If all satellite system owners will do the following three things, we may

(Continued on page 62)

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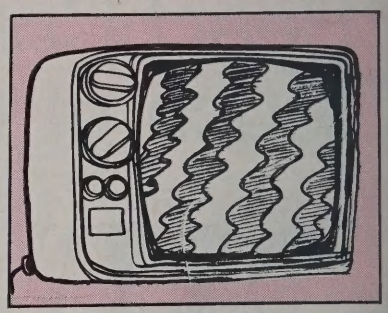
EDITORS NOTEBOOK

By Thomas J. Stocker

UNSCRAMBLING SCRAMBLING: For the past few months confusion has reigned on the subject of scrambling and that should continue through the first half of this new year. The free marketplace will do more to resolve this issue than all the rhetoric thrown out on both sides of the issue.

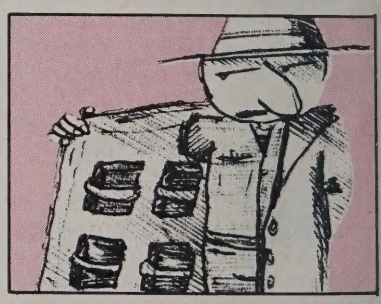
Emotionally, scrambling has been a hot topic among earth station owners because of the large investment involved in such a system. Whether the individual spent $500 or $10,000 on a satellite system is a moot point among the current so called "cable programmers." It is not so with the system owner.



The basic error in the current cable industry's reasoning is that programming transmitted by satellite is cable programming, rather it is programming directed to the cable market. The free marketing system, and fierce competition exists among these programmers to be included on cable systems. Cable systems rarely go courting programmers; rather, the reverse is true. Programmers accomplish this by offering their "services" at competitive rates or for free. For example programmer "A" may not charge anything per subscriber household depending totally on advertising revenues to keep their programming aloft on the satellites. On the other hand a basic "popular" programming service may charge upwards of 25 cents per month per household which is still a ridiculously low sum when compared to what these same programmers are planning to charge home satellite system owners.

YOUR CHOICE: Cable ran an ad campaign in the last quarter of 1985 that made little sense. The campaign centered around a tag line that cable was "your choice...not more choice." If the home satellite industry were to ever run an advertising campaign they should adopt that line. While cable is ideal in high population density areas it is not so for millions of Americans. Cable chooses the programming they can buy for the cheapest price and as a cable subscriber you're stuck with it like it or not. Obviously what is delivered to you via cable is the cable company's choice not your choice. With a home satellite system you will be able to make that choice and again as the home satellite delivery system becomes more popular you will find programming prices falling dramatically, and many more transmitted in the clear. With Ku band joining the ranks of C-band there will be a dramatic increase in programming and those wise enough to invest in a satellite system will not regret their investment in the coming months and years.

THE LITTLE BLACK BOX: For several months a major manufacturer of scrambling and descrambling equipment has been courting the home satellite market. Many system owners apparently hold the belief that someone will introduce a little black box that will decode all satellite programming that is scrambled for free. There are two basic flaws in this kind of thinking—first of all it is patently illegal to operate such a device in conjunction with a home satellite system, and secondly there are going to be a lot of underground manufacturers of such devices that simply will not work. Claims for such devices have been around almost as long as the home satellite industry and we have heard many horror stories of persons who have lost several hundred dollars by purchasing such devices, and never recovered their money. Naturally the device did not work.



Illustrations by Sean Kevin Gaffney

Home satellite television joins the ranks of other entertainment delivery systems which include over the air broadcast TV, home VCR's, MDS, and cable. All of them are simply delivery systems and rarely originate much of their own programming, rather they rely on vendors, such as satellite programmers, to provide the product. Cable and other delivery systems created the demand for the wide diversity of programming and diversity of programmers, it was not the programmers that created the demand for cable. The early history of cable proves that because in the early history of that delivery system there were only a handful of programmers, now there are nearly 100.

Lately we have begun to see direct broadcast services (DBS) appearing on the satellites which is intended for both the cable and home satellite TV market. As the number of home satellite systems grow you can make book on the fact that more of these free services will appear on the satellites for your direct benefit. As this occurs, and competition among home satellite programmers becomes more intense your investment in a satellite system will be secure, and a wise choice.

While other delivery systems may believe their's is the best system for program delivery the free market place will ultimately prove that all systems are compatible with each other, and actually compliment and enhance both the variety and quality of programming. That will continue to be a fact of the American free market system for as long as this nation stands. No one delivery system can satisfy the needs of every American as evidenced by the explosion of home satellite TV industry in the past three years.

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Your Questions Answered

By E. L. Payne

PAINTED DISH?

Q *Can I paint my satellite dish to match its surroundings?*

A Dishes can be painted to blend in with their environment. In some cases dishes have been decorated with artwork or logo's to stand out as a hi tech sign, however local zoning ordinances may prohibit that type of artwork so be sure to check with your local authorities before emblazoning your dish with a mural or logo. Solid fiberglass dishes stand out more so than mesh or perforated type dishes, and can be painted with a latex based outdoor paint. Should you wish to decorate your dish with artwork an acrylic based canvas primer should be applied as a base coat, when dry the artwork can be applied with artists colors, and when you're satisfied with the results a protective clear acrylic coating should be applied. Metallic dishes can also be painted but to assure good paint adhesion the factory finish should be roughed up with steel wool prior to applying a coat of weatherproof acrylic enamel.

SITE SURVEY

Q *I have talked to several satellite television dealers about installing a system and most recommend a site survey prior to purchasing the system. What's involved and do I really need it?*

A Considering the purchase you are contemplating a site survey is a good investment. The satellite dealer does not know for sure if a system will work in your location without a survey which also allows for a more accurate estimate of installation costs. Basically the survey involves the selection of the antenna site insuring an unobstructed view of the satellite belt, and in some locations where terrestrial interference is suspected (created by land based microwave systems) a portable satellite dish can be set up to verify the best location to minimize or eliminate the interference. In the February issue we included a do it yourself site survey and next month we will feature more information on site survey's which is very important to the potential system buyer.

(Continued on page 63)

TECH TALK

By Edgar Payne

You get what you pay for if you're lucky.

It is human nature to want the most for the least. This holds true for almost everything and the purchase of a satellite television system is no exception. Representing a major investment for most of us, the typical remote controlled satellite system (installed) costs upwards of three thousand dollars. How can we get the most value for your investment in this high tech entertainment source.

It's not difficult but it's not exactly easy either. Confused? Most people are when confronted with a decision involving money and technology they won't understand. A basic knowledge of what you are about to purchase and some background on whom you are purchasing it from are the key to eliminating the confusion factor.

Personally any time I spend, or invest as I tell my wife, a large sum of money I endeavor to learn all I possibly can about the item I am going to buy. I learned long ago that the lowest price is not always the best value.

It was P.T. Barnum who said, "A sucker is born every minute," and for every gullible consumer there are several con artists, hucksters, and flimflam men running a scam. I'm not saying that satellite dealers in general fit into this category, but in any industry, especially the rapid growth high tech industries, there will be some who have less than honorable intentions. There are also those with good intentions who do not know enough about the technology to hire competent crews to install the systems they are selling. I recently visited one such system, the equipment was a high quality top of the line system from a prominent manufacturer, yet the customer has had problems with the system from the day it was installed.

Sold in good faith by a new dealership the problems lie in the fact that

(Continued on page 62)

Edgar Payne is an electronics expert from Pittsburgh, Pennsylvania, who is currently employed with a major television station as a satellite communications expert. He also has been active in the sales, installation and service of home satellite systems for several years and has written many articles on the subject.

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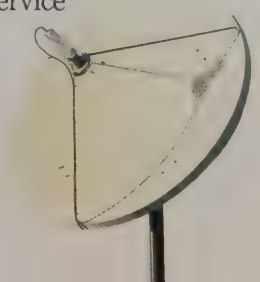

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Can't afford a new satellite system? Well here's a guide to buying used equipment to get you on the road to enjoying hundreds of TV channels.

By Tim Olin

Here's an ad I saw in one of the papers the other day: "Complete satellite television systems, sales and service. New and used equipment.

Used equipment?

Should you purchase used satellite equipment?

With all the new products on the market, and prices dropping almost every day should you shell over your hard earned dollars for...used?

My opinion is yes. But do so very carefully. There has to be several million dollars worth of trade-ins, repossessions, demonstrators, outdated models and gone-out-of business merchandise available. Ask almost any dealer about the amount of used equipment they have on the shelf and the reply more than likely will be "more than I want."

Why would you want to buy something used versus something new, especially with the prices on new systems dropping almost every day? No fancy explanations here. It's a reason as old as bargaining and haggling is, because it's a good deal. That is probably the primary reason, plain and simple.

There are some basic questions to ask when evaluating each and every component. When the component is installed, which it should be, ask the following questions: what degree LNA is being used, what satellite is it on (look at not only the hot ones such as Galaxy 1 or Anik, but also F3), is there a warranty, is there a location where you can get parts and have the unit repaired, and why is the unit being offered at reduced cost? Don't leave it all up to your eyes and ears, though. Get physical. Touch the product.

Let's take a look at how to go about this process by breaking it down, component by component, beginning with the dish. Find out the reason it is for sale at a reduced price. If it is a damaged antenna evaluate the extent of the damage. Is it out of parabolic shape? Eyeball it from one edge to the other. Run your hand over the surface as well as look at it. Is it rippled? Stand behind it and examine it for dents or breaks in the surface.

If it is a fiberglass antenna, look for cracks and chips and examine the bottom for drooping. Look around the edges for separations. Make sure everything you need is included, such as the button hook or tripod, the mount and the pole. Make sure the reflective surface is painted. If it is a steel antenna look for rust.

Examine the mount. Make sure there are no breaks in the welds, that all the nuts and bolts are in place and that all the attachment points are still intact. Make certain that when it is put on line that it tracks properly. That it picks up all the satellites in the belt. Look for rust spots.

Have it put on line and remember to ask questions about the degree of LNA being used. Many times receivers are offered at reduced prices because they are

demonstrators or trade-ins, but the sad fact is there are many available for a reduced cost because that particular model is no longer manufactured or the company has gone out of business. If it's not a real complicated receiver it's possible that there are enough parts around to repair it if it fails. Some of the more exotic types require some hard-to-find spare parts.

Does the receiver have all the knobs and buttons. Look at the back of it. Are any of the cable ports loose? Are all the switches and connection points in good shape? Will you get the full use you want out of it? If it is stereo does it still work? If it has a remote does the remote function on it? Make sure when it is put on line that the same downconverter that goes with the unit is on line as well. Check the meter to make sure it is working.

The LNA/LNB

In the early days of this business I was acquainted with a person in the satellite industry that said things would become so cheap that if something went wrong with one of the electronics, "Just throw it away and get another one, it will be cheaper to buy a new one than to get it fixed."

It has almost gotten that way with LNA's. We have sent some in to be repaired that are out of warranty and rule of thumb seems to be that it runs $75.00 to fix them. That's over half way to the cost of a new 100 degree LNA now a days. So when it comes to buying a used LNA, I would say don't. The exception is when an LNA has been used as a demonstrator, at one location and is a heck of a good deal.

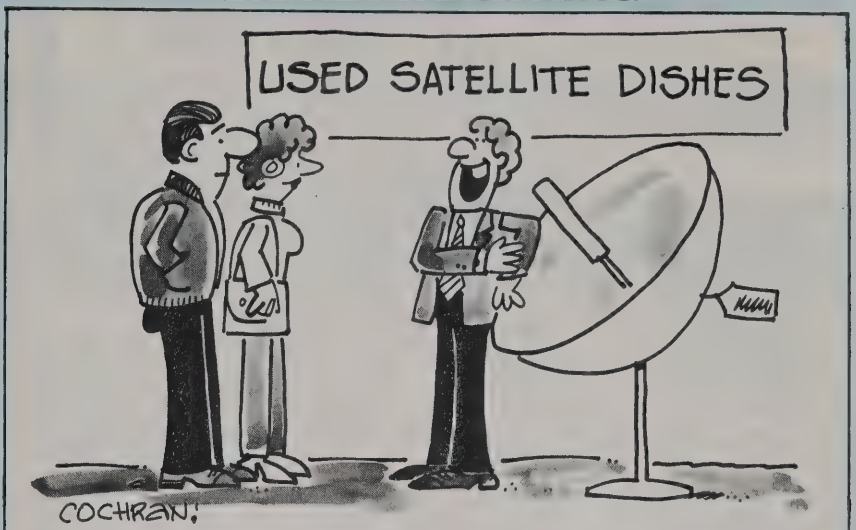
With the price of LNB's coming down, there has been a continual drop in the price of LNA's. The pressure for LNA's to stay competitive has made them attractive as new units. From what I have observed LNA's have become more and more reliable and less of them fail than used to happen. However, there are still plenty out there that don't come up to the performance standards they should. This is one component I would try to buy new.

The Polarizer

Polarotors are fairly inexpensive to begin with but there is one basic device that fails on them, the servo motor. The servo is an expensive litte device running about $30.00. It's

(Continued on page 64)

BARGAIN HUNTING



"It was owned by a little old lady who only used it to watch religious programs on Sundays."

TARGET: Small middle American City.

OBJECT: Buy a used satellite system for the lowest possible cost.

METHOD: Shop around.

RESULTS: Excellent

While big cities are notorious for having everything anybody could ever want—from exotic to illicit—sometimes small town America has some things you could never hope to find in the big towns. One of these objects could well be a satellite system selling for less than $500—that's right, less than the price of a hotel and a pair of meals in the typical big city.

It's a fact that home satellite television is starting to show its age, even though it was barely out of diapers just a few years ago, and with it bring a whole new dimension to owning a system. Buying used equipment.

To find out if it is possible to buy used satellite gear we hit several small towns and cities in rural north America and one moderately large city (pop. 150,000+).

The results of our random check proved that small town USA is the best source for buying used equipment.

Among some of the bargains we came up with were a receiver that had been selling for over $500 just a year ago could be had for $50 along with the downconverter and polarotor control. Dish drives and controllers selling used in the $150 range—far below new or replacement cost—and satellite dishes in the $300 range.

While the electronics for a system is the easiest to find the dish—at that bargain basement price—was difficult to locate.

The dish is about the last item that an individual would trade in unless they wanted to go to a larger antenna. Normally a dish will last many years before it needs to be replaced so they are hard to find on the preowned market.

Receivers and other allied equipment seem to be plentiful, again particularly in the small towns and cities, but three out of the four used systems we purchased required repair. Repair costs ranged upwards of $100 which was not bad considering the unit sold for several hundred dollars to begin with.

Typical costs for low end receivers ranged from $50 to $150 while mid-priced systems of one or more years in age ranged upwards from the high priced low end system.

We did not find any of what would have been considered the high end system components indicating that most people dealing in used equipment were the result of system owners upgrading their home systems.

Our search took us to storefront operations only because they were easy to find, however, many dealers do operate out of their homes and it is possible to find used equipment from that type of operation.

Buying used electric components is risky at best, but if you are a careful shopper and inspect the equipment carefully your only major expenditure could be on the cost of installing the system. Happy hunting.

THE RENTAL OPTION

LOOK BEFORE YOU LEAP

Renting a system offers an alternative to an outright purchase and could save you hundreds of dollars.

By Scott Mehno

A trend has begun to develop in the satellite industry that gives the consumer the option of leasing satellite systems like one might an automobile. The most popular plan available is a 36 to 48 month agreement which enables the dish renter to enjoy the benefits of satellite TV for a monthly fee. Most dealerships offering a rental alternative also include an option that entitles the consumer to eventually purchase the system at a reduced price. One of the biggest advantages to a leasing plan is that it gives the more cautious consumer a chance to "test-drive" a system for himself before actually diving into such a big investment.

Prospective system owners investigating rent or leasing plans should consider the following before renting a dish—Is the monthly rate charge as equitable as if you had purchased the system outright?Many times in other industries a rental fee can add up to a higher cost than if you had financed the purchase through a bank or loan company.

The second point to consider is making sure the system is insured by the retailer you're dealing with. One of the benefits of leasing is that your dealer is still responsible for maintenance of the system. Make sure a service contract is connected with you're rental agreement. Having direct access to professional care in case of malfunction is a big selling point for rental outfits. Make sure the one you chose has a workable and comprehensive plan.

Thirdly, make sure you utilize the everchanging technology of the industry. The rental option can give you the opportunity to interchange equipment, enabling you to keep up with the latest available features. Most system dealerships offer different monthly rates, depending upon the sophistication of the system. Seek out a dealership that allows you the most flexibility when choosing which system to rent.

Try to obtain a package deal that includes more than just the dish, receiver, feedhorn, LNA etc. Some dealers will throw in bonus accessories to sweeten the deal, adding remote control for example, or for a higher monthly rate you may be able to include block access to downconversion hardware with your rental which gives you different viewing arrangements throughout your home. This does not necessarily mean that the best renting option for you has to be high-end.

Part of the reason for an increase in the rental market is the large volume of satellite equipment now being traded in by consumers. Used and or low-end equipment obviously can be had for a much lower monthly fee. This availability has created an array of products that consumers can now choose from when renting a system. The following is a standard type of agreement some dealers use when renting out equipment. You can refer to it when dealing with any of the rental outlets in your areas. Most dealerships now offer a tri-plan when renting. This usually involves a high-end, middle-line, and low-end or used hardware. For example, one retailer surveyed offers Drake, Uniden, Channel Master and other major manufacturers, but varies the rates depending upon the purchase price of the units involved. His breakdown is also based on dish size as well. A seven foot system leases for $30.00 a month on a 48 month lease plan, a mid-line systems rents for $39.00 a month. The top of the line, which includes all of the latest features including block downconversion can start at $100.00 and go up to $125.00 a month. At the end of the rental period, designated in the contract, the customer has the option of purchasing the system at a fixed price determined before the unit is rented. The installation fee is always included as an additional charge in this particular case, but that may vary with the dealer you choose.

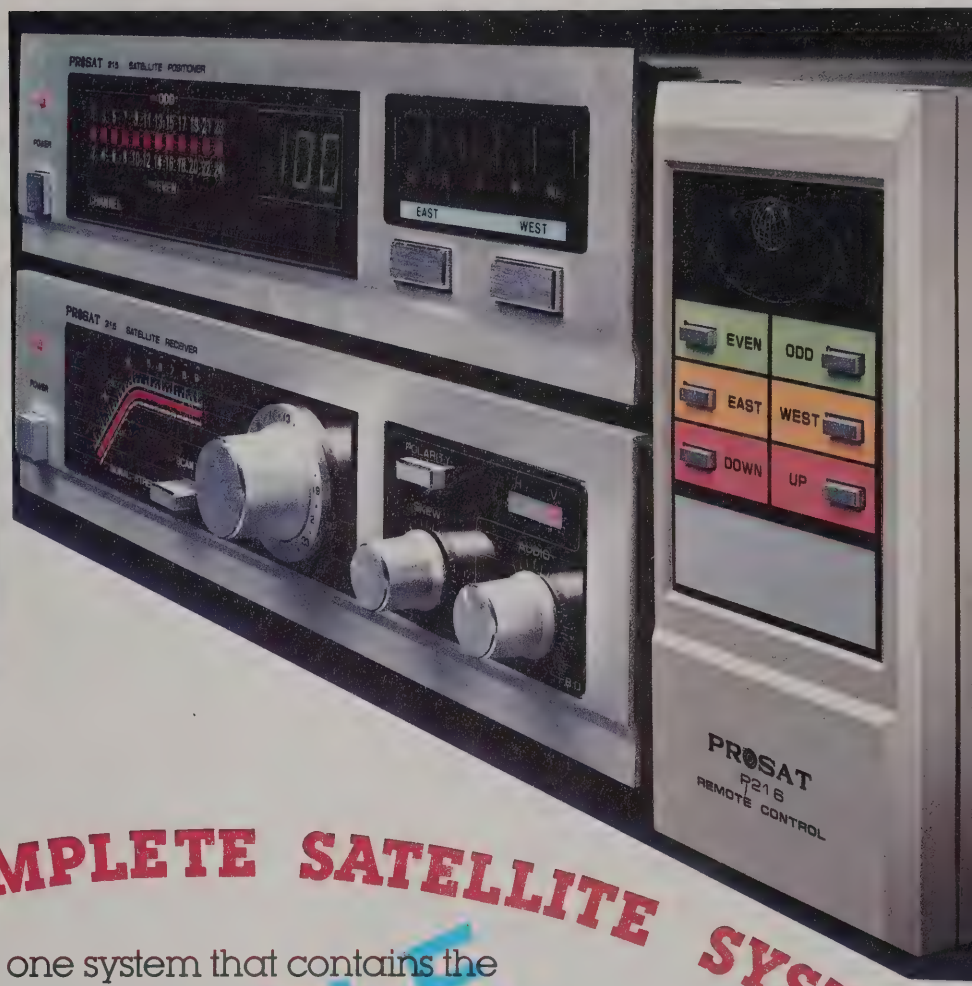
Installation fees can run as high as $400.00 and should be taken into consideration when choosing a rental or leasing plan. Some companies, however, will cut the cost of installation and charge a removal fee instead. These dealerships usually forgo the minimum-leasing concept, giving the consumer the option of terminating the agreement.

One of the more desirable rental plans to look for is one in which the monthly rate that is paid to the retailer can be applied to the purchase price of the system. Some companies have set up this policy to make the rental plan more attractive. This way your rental payments are an investment in the system you're renting.

(Continued on page 64)

Illustration by Dave Wilson

PROSAT PETAL



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Satellite Scoops

Latest news about the world of satellite TV.

By Robert Angus

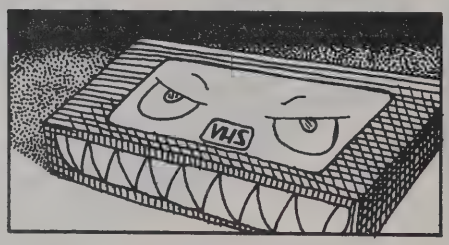
Scrambling The Scramblers

Shades of Star Wars! An unknown tinkerer, following in the footsteps of Arthur C. Clarke, the father of satellite television, has turned science fiction into reality by zapping the satellite-delivered signals of WOR and an adjacent Galaxy transponder being used by Showtime/The Movie Channel to test scrambling. Experts at the Federal Communications Commission and Eastern Microwave Inc., the company responsible for uplinking WOR, believe that the jamming, which began late in October, was deliberate and was intended as a protest against plans by TMC and WOR to scramble their signals.

Satellite tinkerers have always been aware that under the right conditions their TVROs could become transmitters as well, and a few experimenters have tried bouncing their own programs or test signals off the satellites. These ego trips usually have resulted in quick detection by the sleuths of the FCC, followed by a stiff warning or fine. What makes the current case different is the use of a "clean"—i.e. no identifiable audio or video signal, just noise—transmission which the federal agency says is virtually impossible to pinpoint and stop.

The incident occurred only days after a story appeared in a satellite magazine describing how a tinkerer blackmails HBO into giving up scrambling by threatening to jam its signals. "Most of us knew that it could and would be done in the case of intelligence gathering and defense satellites by unfriendly governments," an FCC engineer told me. "But it never occurred to us that it would happen in the case of commercial television transmissions."

Cable operators and TVRO owners began noticing something wrong with the WOR signal at the end of October. On the second day, Eastern Microwave turned off its uplink to study the interfering signal, only to find that it had no characteristics which would make identification possible. The company then filed a complaint with the FCC charging that the interference could only be explained as deliberate interference or transmission testing of some nature. "Given the nature of the signal and its intelligent manipulation of control, deliberate interference must be considered by the Commission," Eastern said.



Abrasive Ad

If you haven't seen them yet, you're about to: ads for a brand of video recording tape which suggest that if you don't use that brand, you're going to need a new VCR in as little as two years. If you do, the ad suggests, the life expectancy of your VCR could be as much as 30 years.

The ad, of course, is nonsense, and a number of irate competitors have taken steps to challenge its conclusions. The research, which underlies the ad, is based on VCR head wear conducted in the manufacturer's (Maxell) own laboratories which pit test samples of a new premium-priced tape against "ordinary tape" which was used; it's a text standard developed in 1975 by the developers of the VHS system, JVC. That company says that the abrasive qualities of today's "ordinary tape" are light years improved from that early standard which was intended for electromagnetic measurements.

The head of a leading independent testing laboratory, Frank Barr of CBS Technology Center, says that because of the variables involved in abrasion measurements, there are no generally-accepted testing procedures, and his company will not conduct them for clients. Barr agrees that some tapes produce more head wear than others, but none produce the striking results represented by the ads. "Besides," he adds, "a little head wear not only is a good thing; it's called for in the VHS standards in order to keep recorder heads clean."

"Kiddie" Porn?

The pornography industry in America amounts to $6 to $10 billion a year in sales and Los Angeles is its capital, witnesses told the U.S. Attorney General's Commission on Pornography recently. One of the witnesses, Los Angeles vice detective Robert Peters, told the Commission the porn videocassette industry has become so profitable that money it earns is being used to finance first-run feature films and even children's fare such as the Strawberry Shortcake and Care Bears series. "Some (x-rated film companies) even own their own industrial complexes," Peters said.

Illustrations by Dave Wilson

Stimulating Prospect

For years, the cable TV industry stimulated profits by expanding its web of wires to embrace ever-larger numbers of homes. But now the cable companies are discovering that they've covered just about all the areas which are economical to serve with cable; and that the cost of wiring remote parts of existing franchises is growing ever more costly. A recent court decision in Connecticut specified that two cable companies located in predominantly rural areas had to do precisely that, so the cablers are looking for some cheaper ways of doing the job.

Not surprisingly, the largest multiple-system operator of them all, Tele-Communications Inc. of Denver, Colo., is considering doing it by renting or selling satellite dishes and decoders

(Continued on page 82)

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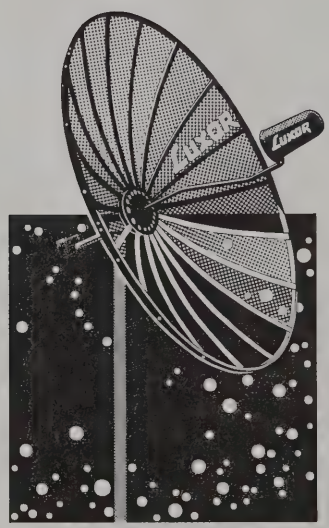


Luxor offers a complete system from antenna to receiver. It's the state of the art in satellite TV.

Go for the satellites!

Get every show in the sky—movies, sports, news, stereo and more—with a LUXOR Satellite TV System.

Until today, you've had to put up with limited TV reception—or none at all.

But Luxor has changed all that.

With a Luxor system, you can reach into the sky and bring down your choice of programs from satellites beaming unbelievable entertainment variety 24 hours a day.

Capture programs you never could see on "regular broadcast" TV . . . or even cable.

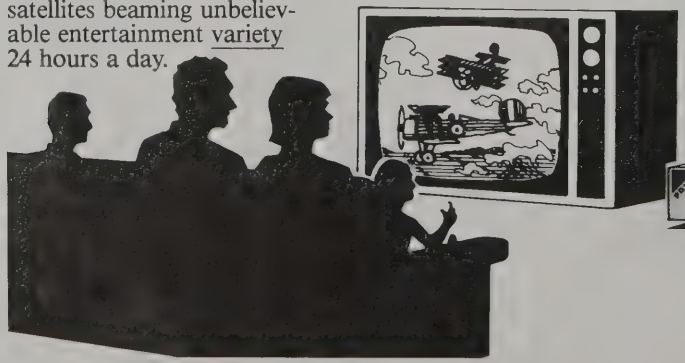
NO CABLE HOOKUP. 100-PLUS CHANNELS.

You get practically unlimited choice, more programming in a single evening than you could watch in a year. And brilliant, clear reception that only superbly engineered equipment can give you.

Luxor Home Satellite TV is designed by Scandinavian electronic engineers with a mania for precision and quality.

A Luxor system delivers picture quality that beats the best available on cable—because you receive it directly from a satellite overhead. (The signal is broadcast straight to you; it does not lose clarity by having to travel over miles of cable.)

An investment in satellite TV equipment will bring you rich rewards in viewing pleasure for many years to come. And a Luxor system is within the reach of most families.



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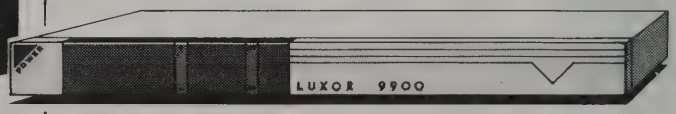

Luxor's affordable, new 9900 satellite receiver is pre-programmed at the factory to remember more channels than any other receiver. Just push a button. You automatically pick up any picture in the sky. Luxor has wireless remote control, plus digital display to identify the satellite and channel you're watching. The most advanced satellite receiver!

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Your Luxor system—including "dish" antenna, receiver, and components—is fully guaranteed. It is backed by the service expertise of our national network of hand-picked Luxor dealers and distributors.

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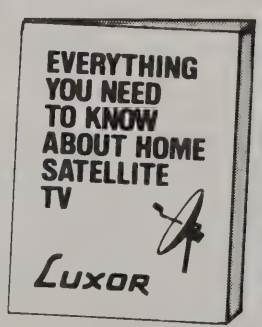

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SPECIAL REPORT: Ku and You

THE INCREDIBLE SHRINKING SYSTEMS

New, more powerful satellites, are preceeding the day when you'll be able to wear a complete satellite system on your wrist.

By Dr. Ed Meek

The vision of rooftop antennas popping up on homes and businesses like mushrooms is not far away with the rapid development of Ku-band technology.

Ku-band is the higher frequency 12 GHz signal from a new generation of high power satellites. Because the signal is at a higher frequency and comes from a stronger source than the traditional C-band or 4 GHz satellites, the Ku-satellites allow the use of a much smaller antenna...about 4 feet and perhaps as small as 18 inches.

Some uses for Ku will see antennas the size of an electric shaver mounted on the top of cars and trucks.

For those who doubt there is a Ku-band market developing, a quick check of future satellite launches offers a convincing picture of skyrocketing growth for Ku.

Currently there are four satellites offering both C-band and Ku-band services and seven additional Ku-band satellites. About 25 C-band satellites serve the Western world but of course that doesn't include military applications.

The picture is changing, however.

Of the scheduled launches through 1990—just five years—17 satellites will be C-band and more than 75 will be Ku-band with a dozen or so additional satellites providing both Ku and C-band services.

The Ku 12GHz frequency offers two primary benefits over C-band. Dish size and freedom from terrestrial interference.

Ku receivers, for video, generally are 4-5 feet but the average size will become smaller as the technology develops. A dish size of about 18 inches can be expected and at a cost sometime in the future of about $150-300. But this is a few years off.

Size, lower costs and less interference from other microwave signals make Ku the more attractive technology, particularly in urban and suburban areas where space may be limited and where telephone microwave patterns limit the use of C-band receivers.

The Ku market currently is largely tied to business in this country. Corporations with offices scattered across the continent are using Ku to interconnect their computers and to establish telephone and video conferencing capabilities. Home applications are developing rapidly as a growing number of television services are moving to Ku satellites.

NBC recently switched one of its feeds to Ku using SBS-3 and both ABC and CBS will soon do the same. All three networks currently use Ku birds for transmission of news and sports. Two Canadian satellites, Anik C2 and Anik C3 offer programs ranging from movies and sports to pay TV. In addition, Holiday Inn is using a $50,000,000 Ku system to send news, movies and sports to

properties coast to coast. RCA is launching another Ku satellite that is likely to carry entertainment programming, perhaps as many as 18 transponders.

The Ku satellites currently available to North American viewers include: Satcom K-2, 77 degrees West; Satcom K-1, 87 degrees West; SBS 3, 95 degrees west; SBS 2, 97 degrees West; SBS 1, 99 degrees West; SBS 4, 101 degrees West; Gstar 1, 105 degrees West; Anik C2, 110 degrees West; Anik C3, 117.5 degrees West, and Spacenet 1, 120 degrees West.

All of these satellites carry programming of some kind. TVRO buffs find the wide range of news feeds and video conferences of particular interest.

Unlike C-band satellites which have both vertical and horizontal polarization, Ku satellites often are vertical or horizontal, or offer both polarities. SBS 3, for example is horizontally polarized while Gstar

"The Ku 12Ghz frequency offers two primary benefits over C-band. Dish size and freedom from terrestrial interference."

and Anik C3 on its West beam are vertical and Anik's East beam is horizontal.

The east and west beams of Anik illustrate another benefit of Ku technology. Ku birds can have a broad footprint or coverage area like C-band satellites as well as have several spot beams which, like a spotlight, provide a signal or signals to one or more narrowly defined locations.

The uses for Ku excite the imagination bringing to mind Dick Tracy's wrist watch TV. The reality of such a device is within technology's reach.

One innovative application for Ku is being developed by a group called Omninet. Omninet is developing a service soon to be offered to business which will allow the use of very small receivers, perhaps the size of a package of cigarettes. Omninet has developed the technology which the group sees being applied first to the trucking industry. A Ku satellite will be able to track hundreds of trucks or other vehicles as they travel throughout the country. Each vehicle will be equipped with a small receiver mounted above the cab. The Ku satellite will be able to track each vehicle accurately, wherever it travels, to within one-eighth of an inch of its location!

The Omninet service is expected to have wide application in all areas of public transportation. One trucker considering the benefits and liabilities of the system which might be used on his truck said he might have to reconsider those side trips he's been known to make to his girlfriend's home just south of Birmingham.

Manufacturers and distributors of C-band TVRO products are rushing to the market with a wide range of products which will allow owners of C-band systems to adapt their antennas to pick up Ku signals. In some cases, the conversion will be fairly easy and include the attachment of a Ku LNB and the addition of a Ku receiver. Other antennas, such as some wire mesh antennas which have larger spaces in the mesh, will be more difficult to convert and may require the replacement of the mesh or the use of an insert or mini-dish placed inside of the larger dish. Unfortunately, some mesh antennas which have not been designed with Ku in mind will simply not be able to pick up Ku signals. Most fiberglass and solid metal antennas will work at Ku, but not all will work. The shape of the antenna is critical for Ku, much more so than for C-band.

C-band antenna owners who convert their systems to a Ku/C-band TVRO will find that finding the Ku satellites is more difficult than locating the C-band satellites. Alignment and positioning of the antenna is extremely critical for Ku and many antenna actuators in the market today do not allow the precise control that is required to accurately position an antenna for Ku reception. This problem, too, is being addressed by manufacturers. The problems associated with a Ku/C-band TVRO are so numerous that some manufacturers are suggesting that two antennas, one for Ku and one for C-band be considered. Other's, however, are developing new systems designed to work at both

(Continued on page 66)

Ku-BAND VIDEO CHANNELS

TR NO.	TR FREQ.	POL.	DSB-600/700 CH. NO.	SERVICE
SBS 3				
TR-1	(11.725)	H	1	Occasional Video
TR-2	(11.774)	H	4	VIDEOSTAR CONNECTIONS (6.8)
TR-3	(11.823)	H	6	NBC—West Feed (6.2)
TR-4	(11.872)	H	9	Occasional Video
TR-5	(11.921)	H	11	NBC (6.2)
TR-6	(11.970)	H	13	NBC—Central Feed (6.2/6.8)
TR-7	(12.019)	H	16	CONUS/HUBCOM (6.2/6.8) CAMPUS NETWORK (6.8)
TR-8	(12.068)	H	18	PSN (Private Satellite Network)
TR-9	(12.117)	H	21	NBC (6.2/6.8)
GSTAR 1				
TR-15	(12.110)	V	20	Occasional Video (6.2/6.8)
TR-16	(12.171)	V	24	BONNEVILLE TELECOMMUNICATIONS
ANIK-C3 East Beam				
TR-1A	(11.730)	H	1	Atlantic Satellite Network (5.41)
TR-2A	(11.791)	H	5	Premier Choix/TVEC (French) (5.41)
TR-4B	(11.939)	H	12	La Sette (French) (5.41)
TR-5B	(12.000)	H	15	TV Ontario (5.41)
TR-8A	(12.157)	H	23	First Choice (5.41)
TR-8B	(12.183)	H	24	Radio Quebec (5.41)
ANIK-C3 West Beam				
TR-4B	(11.926)	V	11	Knowledge Network (5.41)
TR-5A	(11.961)	V	13	Access Alberta (5.41)
TR-5B	(11.987)	V	14	Premier Choix (French) (5.41)
TR-6B	(12.048)	V	17	First Choice (5.41)

ELECTRONIC NEWSPAPER

SATELLITE BEST-KEPT SECRET!

Tired of the clutter of newspapers? The paperless newspaper is here and is just one more benefit you can derive from owning a satellite system.

By Gary Leonard

When writers gazed into their crystal balls in the 1940s and 1950s, many of them saw the day when the evening newspaper would be delivered electronically through a TV set or facsimile machine. Gone would be the bother of picking one up at the corner drugstore (there still were corner drugstores 'way back then) or hunting around in the bushes for the one thrown there by the paper boy.

For several years now, there has been an electronic newspaper available to virtually anyone who can receive WTBS (Galaxy 1 Transponder 18) either via cable or satellite. Prepared daily at newsrooms in Cincinnati and an Atlanta suburb, it consists of 100 "pages" of news, sports, features, weather, business reports and even classified ads. Stories are updated regularly throughout the day, and sports results are likely to be just as up-to-date as those on your local radio station.

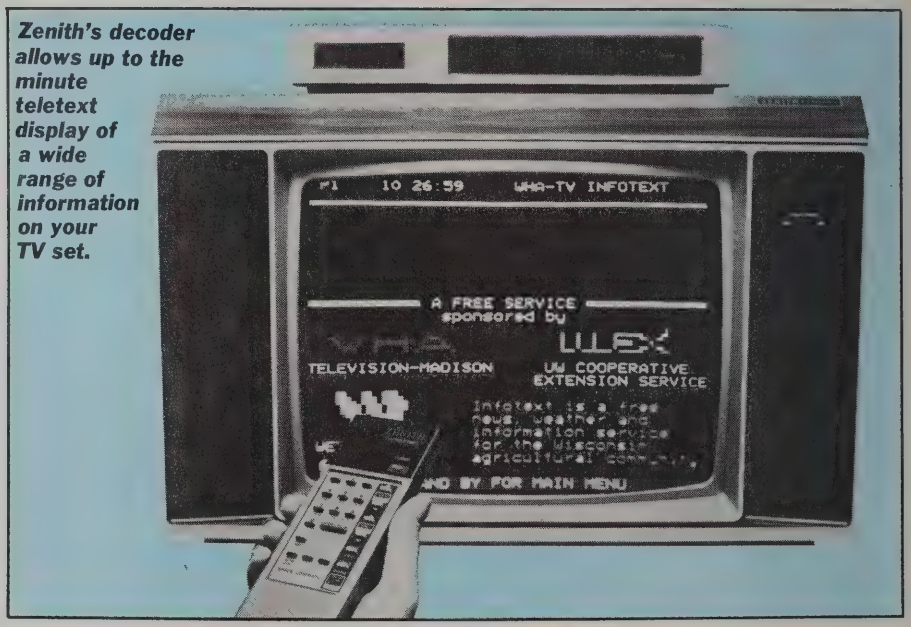
Electra, as the "newspaper" is called, may be one of the best-kept of all satellite TV secrets. It's not listed in any of the program guides, and you won't find it by flipping your tuning knob. It's hidden in WTBS' vertical blanking interval, the black bar which separates one TV picture from the next. To pull it out and view it, you'll need a special decoder, at present available only from Zenith and Southern Satellite Systems. The Zenith CV 550, priced at $295, is available mainly in the Cincinnati area, where Electra is broadcast over the air as part of the WKRC, Channel 12 signal. Even there, sales have been less than overwhelming. It's estimated that in Cincinnati and elsewhere across the nation, fewer than 1,000 non-professionals read Electra on any kind of regular basis.

Southern Satellite Systems and WTBS have been carrying the teletext signal virtually since it started five years ago as an experiment by Field Communications, which then owned the Chicago *Daily News* and TV station WFLD. *Daily News* staffers would prepare the paper and WFLD would deliver it, tucked inside the vertical blanking interval. SSS arranged to have it uplinked to satellite as part of the WTBS signal. SSS' original plan was to rent British-built decoders to cable subscribers for $19.95 a month, splitting half with the cable operators who carried the WTBS signal.

What SSS learned from that experiment was that people aren't willing to pay $19.95 a month for information which is readily obtainable elsewhere, if not always as fast or in the same useable form. When Field sold WFLD and killed the *Daily News*, it looked as if it might be the end for Electra. However, WKCR's parent, Taft Communications, came to the rescue and SSS realized that the key to success would lie in encouraging advertisers to support the "newspaper," rather than subscribers.

To receive Electra, you'll need a dish which provides lots of gain as well as the decoder. That means generally a large-size solid dish capable of capturing as much of the VBI signal as possible. It'll also help if you have a large-screen TV receiver with high resolution. The reason: teletext print is very hard to read on screen sizes under 19" and with anything less than a very sharp picture. Unless you're getting a perfect WTBS picture, some of the information is likely to drop out on its way through the decoder, which can mean a "page" with all of the "y"s missing, or a corner of a diagram or a couple of lines of copy. The commonness of these incidents, in fact, may help to explain why teletext has not become more popular.

In fact, it could become very



Zenith's decoder allows up to the minute teletext display of a wide range of information on your TV set.

Elmira Hoot lives with snow 365 days a year.

That's life in the TV snow belt. There's snow on soap operas. Snow on movies. Why, last year it even snowed right through baseball season. That's what happens when you live too far from TV stations and cable companies.

An R. L. Drake satellite receiver can clear up the snow. A Drake receiver pulls in TV signals direct from communication satellites. Crisp, clear, signals that give you a brilliant television picture no matter where you live and more entertainment choices than you ever thought possible.

What's more, the sophisticated microprocessor memory on the new R. L. Drake receivers locks in the sharpest satellite signal every time.

And when you use Drake's new microprocessor remote control system, you get armchair access to thousands of programs. Movies, music, news, sports and specials.

Elmira Hoot doesn't live in the snowbelt anymore. Ever since she got herself a satellite dish equipped with a new Drake receiver, her outlook has changed. Now it's always bright and clear.

Get the big picture from America's largest producer of satellite TV receivers. See the yellow pages for the R. L. Drake satellite TV dealer nearest you. Elmira Hoot did.

DRAKE

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popular indeed in a year or two when digital TV receivers incorporating the conversion integrated circuits developed by ITT come into use. Zenith has had such a set on the drawing boards for two years and still hopes to introduce it sometime during 1986. One of the benefits of the ITT chip, which will also be used by other manufacturers to produce digital TV receivers, is that it provides teletext decoding automatically and costs only about $2 at the manufacturing level. In Europe, where the circuit was developed and where the transmission system being used for Electra is in widespread use, as many as 85 per cent of homes have the ability to decode it.

Is Electra really worth the effort? I lived with it recently for 30 days, and found that while it has its uses, neither I nor any other family member misses it since we sent our decoder back. As presently constituted, the newspaper consists roughly of 50 pages of world and national news prepared in the WKRC newsroom and an additional 50 pages of features and information added by SSS in Georgia. The news of the day is covered in 20 "pages" or so, with one story on each "page." In theory, a "page" equals one TV frame. In fact, many stories occupy two or more frames with some running to five or six. An additional 20 pages are devoted to sports, with extra sections on financial news, stock market and other business tables, weather, recipes, games, horoscope and the like. Not all of the paper is solid text, by any means; the Ameritext transmission process is capable of handling charts, graphs, computer-generated graphics and in some configurations even still photos (though Electra does not use any of the latter). It prides itself on its clean and highly legible graphics and brilliant use of color.

The news stories frequently are right off the wire service tickers and are at least as detailed and up to date as those on your hourly-news radio station.

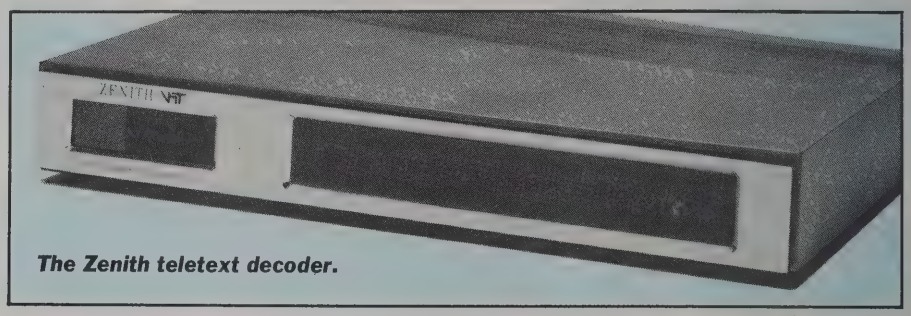
The news stories frequently are right off the wire service tickers and are at least as detailed and up to date as those on your hourly-news radio station. Sports results likewise usually turn up on Electra before you see them on a TV sportscast or even Cable New' regular sports breaks.

There's an index for all of this information, which lists the sections of each day's "paper" and then the contents of each particular section as you call it up on the screen with the aid of a handheld keypad. The whole 100 pages "rotate," so that you may have to wait a second or so for the page you want to view to appear on your screen. When you enter the code number for the page or story you want, it appears on the screen in proper sequence and stays there as long as you want it. (For example, let's suppose that when you turn Electra on, the sequence is at 078, as indicated by a number at the bottom right of your screen. The master index is 001, so when you press the keypad, you'll have to wait for the sequence to begin, in this case a split second. You decide you'd like to see the league standings on Page 043, so you enter that number.But by this time, the sequence has reached 049, so you'll have to wait again for it to return to the number you've selected. When it does, the league standings appear on the screen and stay there.

In the case of multiple-frame "pages," each will remain on the screen long enough for you to read before moving on to the next. If you miss something or want to refer back to a fact earlier in the story, you have only to wait for the "page" to begin its sequence all over again automatically. You can call up story after story, or consult the daily recipe or horoscope.

Electra's supporters admit that all or most of the information is available elsewhere in greater detail or faster (your old-fashioned daily newspaper is likely to contain more detail on any story that really interests you; cable news can give it to you almost as fast and with moving color; your local TV weatherman is likely to have a more comprehensive report for your area and the *Wall Street Journal* lists *your* stocks, not just the market averages and leaders). But, they say, you can refer back to facts in a story, something you can't do with Cable News. You can have the late scores before bedtime and without waiting for the 11 PM news. And you can spend time with only those stories that interest you, without having to wade through TV fillers and puff pieces. And they can beat the conventional newspaper by as much as half a day.

One of the reasons Electra has been slow getting off the ground is that there still is no universal agreement on teletext standards. The Ameritext system used to transmit it is the *de facto* standard in Germany, Holland, the United Kingdom and several other European countries where decode capability is as high as 85 per cent of all households. Until recently, however, NBC, CBS, AT&T, the leading Japanese TV set manufacturers and other heavies clustered around NABTS, a rival system which represented a compromise among systems developed in Canada, France and the U.S. While NABTS promised more sophisticated graphics and virtually instantaneous access time, the system was hopelessly complex and was abandoned after over-the-air trails by the Canadian Broadcasting Corporation, CBS and NBC. And while Ameritext decoders may seem expensive at $295, none of the Japanese manufacturers was able to mass-produce a NABTS decoder which they could sell profitably for less than $1000. The battle is not over yet: Ameritext's friends have yet to demonstrate that there is a need for an electronic newspaper; that teletext is not merely a technology in search of an application.



The Zenith teletext decoder.

One possible application is an over-the-air agricultural magazine prepared by the University of Wisconsin and distributed by the state's Public Broadcasting stations. With the costs underwritten in part by some large agribusinesses, the "newspaper" has the potential of becoming a national electronic Farm Journal, with up-to-date information on markets and futures, weather, new products and chemicals, and so on. It's not on satellite yet—but that's not because nobody's thought of it. In Canada, the company which uplinks eight commercial TV signals for cable companies in rural areas has considered either carrying the Wisconsin farm magazine or creating one of its own. The stumbling block in both cases is money.

Now there's a satellite system worthy of satellite technology.

It takes some pretty high technology to get a satellite to transmit TV signals.

So, you'd think that a home system that receives those signals should be on the same technical level. But, frankly, too few companies have the resources and experience to achieve this. Let alone a worldwide reputation for quality to back it up.

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We put 25 years of electronics know-how to work and developed the most advanced TVRO on the market: the computerized Kenwood Satellite Receiving System. Great looking, feature-packed equipment that's easier to sell because it's simpler to operate.

Just touch a button, and the KSR-1000 Satellite Receiver instantly selects one of 18 satellites previously memorized by the compatible KSP-1000 Satellite Positioner. Simultaneously, the KSR-1000's computer automatically positions the antenna and adjusts the polarity and skew. Simply turn a dial to tune the transponder frequency and that's it. No calculations. And no complications.

And, of course, it comes with an infrared remote control.

What's more, the KSR-1000 has all of Kenwood's famous automatically controlled audio goodies. Like built-in Dolby B* noise reduction and Discrete Stereo, MPX and Matrix Stereo reception, so your customers can enjoy fuller, richer sounding music. The KSR-1000 also features a two channel "parental lock" button that prevents kids from watching adult channels.

Put all this together with Kenwood's LNB-1000 Low Noise Block Down Converter and a KSA-900 Antenna Actuator, and you have a matched system to sell that's simply miles above the competition.

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HOT PRODUCT!

CAGEY MOUNTS

Aligning the pole is a snap with these new mounts that will even let you take it with you if you ever move.

By Edgar Payne

Home satellite television has evolved from an electronic tinkerer's domain to a viable portion of the consumer electronics market. Receivers no longer resemble electronic shoeboxes, designers are packaging the hardware to look at home next to the video cassette recorder and stereo components. Yet outdoors, satellite antenna foundations and mounting methods have remained relatively unchanged. These important areas are beginning to receive more attention as the focus shifts to ease of installation, an inevitable occurance as mass merchandisers gear up to supply the first user installed (do-it-yourself) systems.

Let's briefly examine the traditional way to mount an antenna pole. A hole is dug for the mounting pipe. In cold climates this should extend below the frost line, and the diameter of the hole should allow for sufficient cement to position the pipe solidly. Hundreds of thousands of antennas are installed in this manner, most of which will never experience a problem. Yet the potential for a problem exists, one that can be eliminated by an additional step in the mounting process. In the event the pole shifts the inability to adjust the mounting pole can and will put a system out of commission.

The tracking accuracy of the antenna and respective polar mount depends largely on the mounting pole being plumb. A pole as little as two degrees off will have difficulty tracking the polar arc. The use of a subterranean cage and mounting pole with plate allows for correction in the event the foundation shifts.

A cage mounted antenna support consists of two basic components; the cage, a metal structure designed to be embedded in part within the concrete foundation, and a pole with a steel plate welded to it's base. The plate is drilled to bolt to the portion of the cage that extends above the foundation. This is the same method of pole mounting that has been used successfully for decades by municipalities and departments of transportation for mounting street lights, signs and traffic signals. Many commercial antenna foundations both satellite, and tower, are secured to the earth with a cage type foundation. The subterranean cage takes no longer to install than a traditional pole in cement, and the inherent advantage of being able to adjust the plumb of the pole outweighs the slight additional cost.

Cages have been used for home satellite television antenna mounting for several years though their use is not widespread. As early as 1981, Satellite Reception Systems an Ohio based distributor, was offering the cage as an optional method of antenna mounting. A spokesman for SRS estimates that around seventy percent of the systems they sell include the optional cage.

For the do-it-yourselfer, the cage mounting technique is ideal. Problems associated with getting the pole plumb are eliminated. The cage can even be in the cement several

(Continued on page 68)

1. The cage installation only requires a hole to the frost line in your area and a bit of concrete.

2. The cage is now ready to be mated to the pole. Note the PVC pipe which carries the electronics and actuator cables was also installed and buried at the time the cage was installed and the hole filled with concrete.

3. After mating the pole to the cage, the installer carefully checks to make sure the pole is plumb. Adjustments are made with the set bolts below the pole plate.

4. Detail of the pole and plate mated to the subterranean cage.

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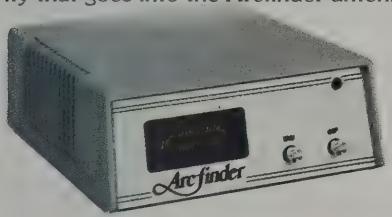
(The Works That Works Best For You!)

If you've been overwhelmed by the multitude of manufacturers and their products in the satellite home video industry, Arcfinder has made your best choice easy! Now with a complete line of satellite system components, Arcfinder offers an affordable package featuring state-of-the-art technology for picture quality that will satisfy even the most discriminating viewer.

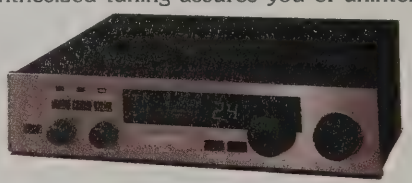
Antenna Control System - The engineering superiority that goes into the Arcfinder antenna control system sets it apart from all the others. Being designed for simplicity, the antenna control provides the customer with dependable trouble free operation. There can be no memory loss ever. Nor miscounting of digital pulses. And to insure many years of continuous operation, Arcfinder has developed a unique means for preventing rust and freeze-ups in the actuator drive. Finally, one of the most pronounced attributes of the Arcfinder antenna control system, is the easy installation due to its basic four-wire connection.



Arcfinder Antenna - Arcfinder's nine foot satellite antenna dish is designed to do more than the others. First, it gathers satellite signals and brings them to you not only distortion free, but also with a superior level of clarity. Second, the tough, rigid construction allows the true parabolic curvature to maintain accuracy, year after year. Third, the four durable steel panels are individually screwed and may be replaced separately and easily in the event of vandalism or on-site accident. Finally, the Arcfinder satellite dish is designed for a long lasting, attractive appearance. Its edges are capped for a water-tight seal and the black see-through steel mesh will enhance any landscape.

Horizon Mount - Arcfinder's hidden mount allows perfect arc tracking. All steel gears will insure years of trouble-free use, and a special backlash adjustment maintains pinpoint accuracy. The neat, clean and attractive design, when combined with Arcfinders antenna dish will appeal to even the most discriminating taste.

State of the Art Receiver - Arcfinder has set a new standard in satellite receivers. Compare the crisp, clear, colorful video quality, before found only in the expensive commercial receivers. By utilizing the latest concepts in solid state technology, Arcfinder provides trouble-free viewing which will earn your confidence. Synthesized tuning assures you of uninterrupted clarity, and video fine tuning offsets interference in T.I. affected areas. Enjoy single or multiple receiver installation with the convenience of block down conversion.



Low Noise Amplifier - It's no secret that many manufacturers are producing LNA's. It's also known that most LNA's generally perform the same function comparably well due to increased and aggressive competition. Arcfinder's LNA, however, not only possesses high tech, element protected circuitry and performance, but also is distinguished by one other very important consideration . . . economy! Arcfinder's engineering magic has made it possible to obtain the same high quality isolation enjoyed by other high priced competitors without their costly pricetag.

Full Viewing Pleasure - Arcfinder brings you satellite system components that are destined to be your first viewing choice. By combining the latest technology with engineering efficiency, Arcfinder is making them available to you at a comparatively low cost. A speedy ship in/ship out is Arcfinder's policy insuring you of prompt, hassle-free servicing, and they stand behind their products completely. Arcfinder has given the system and the support that works best...for your unprecedented viewing pleasure.

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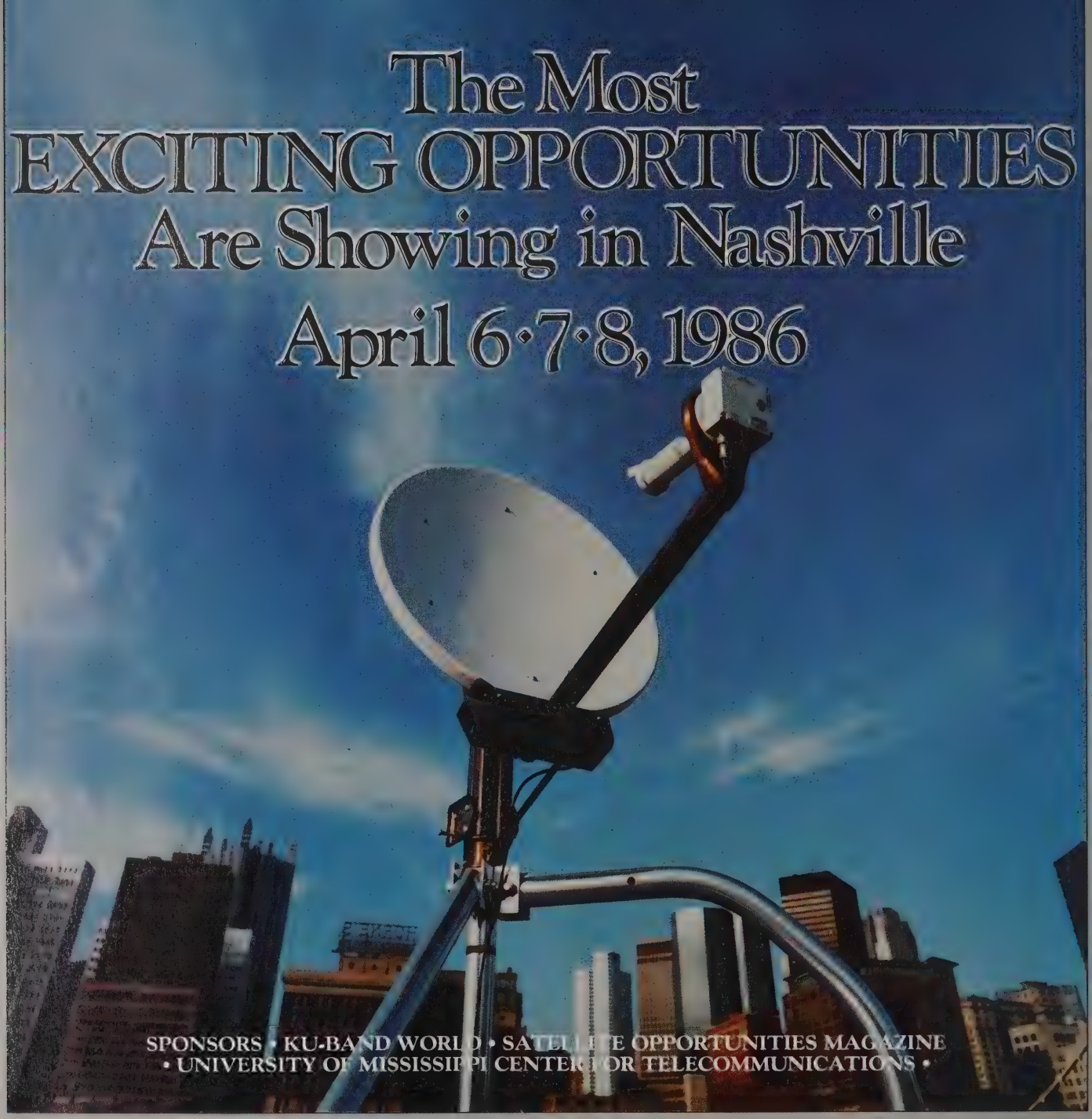

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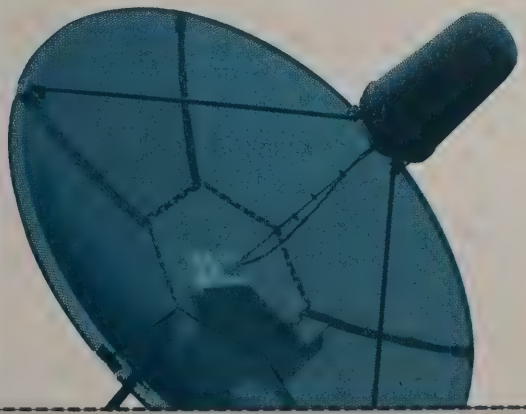

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GIANT-SCREEN TV'S

BIGGER GETS BETTER

Bigger certainly is better—especially when it comes to new generation TV sets.

By Robert Barlow

There's a new generation of color television out there, and it's practically tailormade for home satellite viewers. Large-screen TVs—which, for the purposes of this article, are defined as any direct-view set with a 25-inch or larger picture tube—are rapidly becoming the order of the day among the quality video crowd.

The reason is simple enough: big, crisp, lifelike images are a lot more pleasant to look at than small, fuzzy, lifeless ones. Put even more simply, where color TV is concerned, bigger is better—especially for the kind of programming home earth station owners like to watch.

"People don't buy satellite dishes to snare game shows from the skies," observes one industry observer. "Sports, movies and all kinds of exotic fare is what they're after."

And as Panasonic's Jerry Surprise adds: "The main reason people want large screen TV is to create that home theater atmosphere. There used to be a time when it wasn't fashionable to watch TV," he recalls. "They kind of hid the thing in the corner. But the VCR changed all that, and now, combined with the effects of satellite TV, *nobody* is a slave to the networks anymore. People are dedicating seating areas and rooms around the TV. It's becoming a factor in the home, because it gives you that atmosphere of being in the action."

So, what's out there? The list is long, and growing: 25-inch full-to-the-floor console units with traditional styling; 26-inch square corner sets with nearly-flat screens and a decidedly high-tech look; 27-inch monitors that integrate with TV tuners, stereo amplifiers, VCRs and speakers; and on the horizon, 37-inch monsters that promise to put the realism back in to your home entertainment diet.

As you can see, there's more to evaluating a large screen TV than anything a brief encounter with a tape measure can provide. So, to help you determine which biggie belongs in your rumpus-, living- or home-theater room, we polled the experts—and came up with the following list of features and factors to consider when shopping.

"People don't buy satellite dishes to snare game shows from the skies. Sports, movies, and all kinds of exotic fare are what they are after."

- Components or standalone?—Nowadays, you have the option of assembling your own video system from separate components or buying a ready-made unit. And while many standalones include such features as built-in stereo amplifiers and decoders, speakers, audio/video inputs and outputs and the like, the component approach provides more flexibility. It should be noted that the latter often costs more as well.
- Comb filter—a luxury on smaller sets, built-in comb filter circuitry is generally considered a must on larger units. The filter increases a set's horizontal resolution, resulting in a sharper picture. Most TVs have a horizontal resolution of between 250 and 270 lines; comb filter technology can increase resolution as much as 30 percent, to provide more than 300 lines.
- Multichannel TV Sound (MTS) and Separate Audio Program (SAP) decoder—well on its way to becoming a standard feature on large screen units, these features provide stereo as well as the potential for an additional audio track (for such purposes as translation of the program material or other audio). Make sure you know what you're getting; a decoder interprets the signal, while the amplifier (which can be built-in or separate) powers the speakers.
- Design—taste and practicallity dictate in partnership here. You might love grandiose oak cabinetry, but you might *not* have an appropriate 30-inch by 30-inch by 20-inch space in your home; you may well adore the monitor-look, but it may *not* blend in with your early American decor.

RCA industrial design vice president Dave Tompkins, who serves on the board of directors of the Industrial Designers Society of America, observes: "It gets down to this: it's a nice picture, but when the new wears off in a few weeks or a month, you're going to have to live

Clockwise from far left: Sony's KPR 4110, the GE 40 HP 5000, and Sony's KPR 4150 and KV 2783R.

with this thing probably for five or 10 years. You'd better pick something you feel nice about.

"I always encourage people, if they're trying to make a choice between one unit or another one that costs $30 or even $100 more, and they like the cabinet on the more expensive one, go for it. You don't buy a TV every day."

• Prices—depending on what you're looking for in a large screen unit, you can spend as little as $500 or well over three times that amount. Refer to the product sampling at the end of this article for suggested retail prices on some units.

Other factors to consider include on-screen display of time, channel and other information; remote control (a single unit for all components is better than a coffee-table full of them); and gut feeling.

One industry-watcher notes that "most manufacturers have at least two or three levels of quality, in a kind of good-better-best hierarchy, so if you spend enough time in the stores, it's not too tough to make an accurate 'apples to apples' comparison.

"Just about all the manufacturers have achieved parity as far as image goes, so there's no measurable difference where one manufacturer can say definitely, 'our tube produces the best pictures on the market.' So you're left with personal preference."

To get you started on your quest for bigness, we have assembled the following sampling of currently available hardward. Although not a comprehensive listing, it should provide you with an idea of what's out there, who's got it and how much you'll have to part with to take it home.

Remember that the dollar figures indicated are suggested retail; most units can be had, with a minimum of searching and haggling, at moderately-to-sharply discounted prices.

Happy hunting!

• Goldstar (CMT-2515)—this 25-inch console TV features frequency synthesized tuning (no moving parts), 105-channel capability and infrared remote control. The unit measures 31.5 inches by 32.2 inches by 18.3 inches, and carries a suggested retail price of $649.95.

• Tatung (26 CFD)—this is a 26-inch console unit with stereo MTS/SAP decoder, built-in stereo amplifier, right/left audio inputs, 133-channel cable-ready compatibility, remote control, comb filter and oak cabinet. This set has a suggested retail tag of $1,299.95.

• RCA (FLR-2623)—a 26-inch stereo monitor/receiver, this set boasts a "square tube," 25-connection monitor jack pad, 69-channel cable ready capability, 55-button remote and built-in stereo speakers.

• Yamaha (YM-950)—this monitor/receiver measures 26 inches diagonally, and features MTS/SAP decoder, stereo amplifier, remote control, 134 channels, audio/video inputs and outputs and comb filter. Suggested retail on the unit is $950.00.

• Proton (625)—a 25-inch monitor receiver, this set includes MTS/SAP decoding circuitry, 139-channel tuning, on-screen channel display, video noise reduction system, audio and video inputs and outputs and remote control. It carries a suggested retail price of $1,250.

• Sony (KV-2784R)—this is a 27-inch console unit that features direct audio/video input, stereo decoder, double-sided speakers, pedestal-mounted woofer, remote control and flat, square-cornered screen. Suggested retail: $1,399.95.

• Emerson (MS251D)—this unit boasts built-in MTS receiver, 139-channel capability, video and audio input and output, programmable sleep timer, remote control, woodgrain finish and dual speaker. The set carries a suggested retail of $949.95.

• Zenith (SB2597)—25-inch "cube" set features MTS stereo, black vinyl finish, 178 channels, on-screen display, parental control, tone control and two speakers.

• Samsung (CT663W)—this 25-inch monitor/receiver features frequency synthesized tuning, built-in comb filter, 21-function remote control, two side-mounted speakers, audio/video input and output jacks, on-screen channel and time display and built-in stereo amp.

• Panasonic (CTF-2670R)—26-inch monitor-receiver features remote control, stereo adaptability, 125-channel cable compatibility, audio/video input/output jacks, square picture tube, on-screen display tone controls and dual speakers.

• Magnavox (RF4552SL)—this unit, a 26-unit console set, features programmable scan tuning, 152-total channel capability, 18-function remote, high-resolution filter, built-in stereo decoder, amplifier and speakers. It carries a suggested retail tag of $899.00.

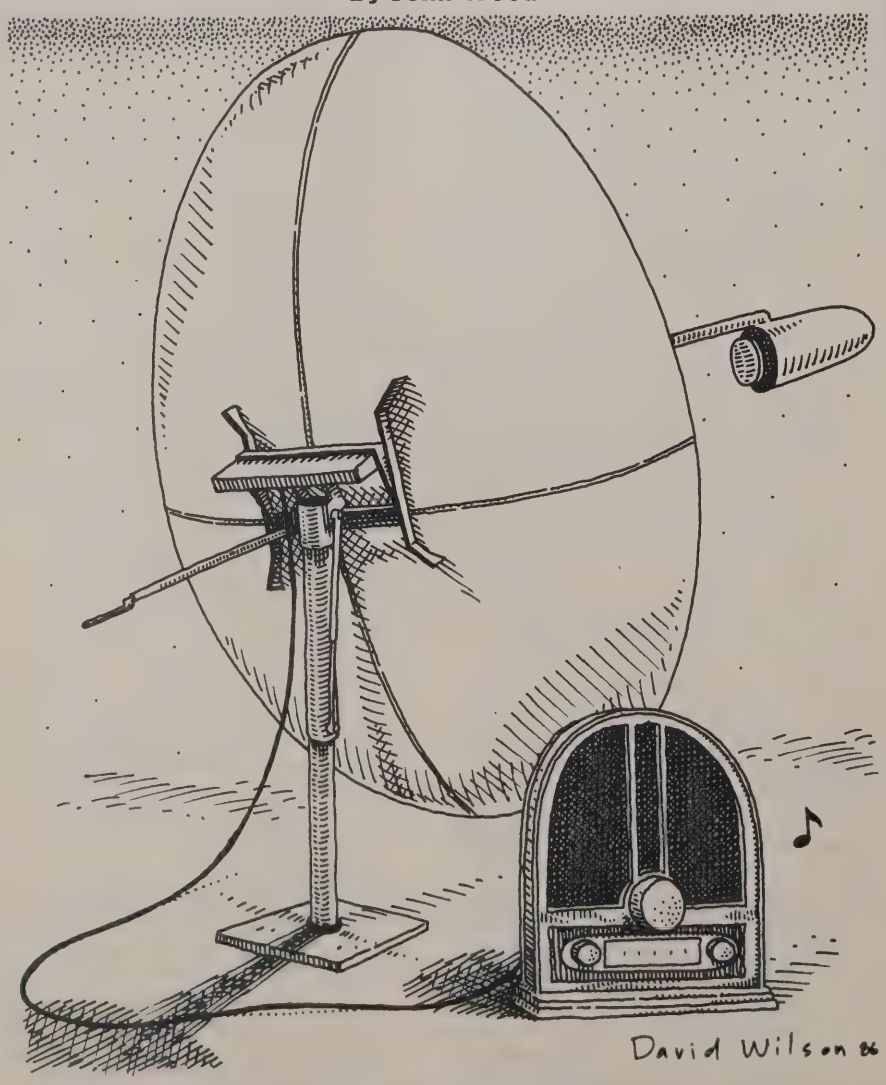
• Pioneer (SD-25A)—billed as an "expandable TV system," the monitor style 25-inch unit allows for expansion through use of optional plug-in modules. Set features remote control, stereo tuner module, 139 channels and charcoal metallic gray finish. Suggested retail for the unit is $1,300. •

SAT-TV'S AUDIO BONUS

50 Channels of Super Sounds!

When we found out that blind people buy satellite systems at first we wondered why, but we discovered, as you are about to, that there is more to satellite TV than a lot of pretty pictues.

By John Wood



Everybody knows about the 100 video channels you can pick up on your satellite antenna. But did you know that there are some 50 audio channels as well, carrying a wealth of information and entertainment found on the FM band only in the nation's most cosmopolitan cities? You can, for example, tune in to nonstop news or a folk music concert in Michigan. You can enjoy virtually any music format you like from heavy metal and progressive jazz to the classics and rhythm & blues; learn from a channel for the blind or enjoy radio in Greek, French or Italian. There are stories for kids and religion for shut-ins, old-time radio and sports; even a TVRO (satellite TV) talk show. The nation's two top classical music stations are available via satellite, both in stereo and with splendid sound.

All it takes to enjoy it all is a satellite receiver with tunable audio. If you don't have one, you can get a stereo processor for $150 to $350 or so which not only gives you access to all 50 audio programs (many of them in stereo) but also stereo and surround sound from The Movie Channel, Disney, the Nashville Channel, MTV, ESPn and a host of other video programs. You can listen monophonically with the speaker in your TV set, or you can take advantage of the stereo signal either through the inputs on one of the new stereophonic TV receivers or the auxiliary inputs on your hi-fi music system.

Each satellite transponder has a range of audio subcarriers available for carrying not only the sound portion of the video broadcast, but up to a dozen audio programs as well.

These subcarriers range in frequency from 5.04 to 8.46 mHz, rather like the frequencies on an AM or FM radio dial. The most commonly used is 6.8 mHz, more or less in the middle of the spectrum. That's where you'll find the audio for all of the video programs you're likely to watch. A second choice, favored by the networks and some other users who don't want casual viewers eavesdropping on their proceedings, is 6.2 mHz. But on a transponder like Galaxy 1's #3 (WGN), there are no less than 11 audio programs ranging from 5.4 to 8.145. These signals are piggybacked on the main video program on that transponder at the uplink.

To receive the program of your choice, it's necessary first to tune in the appropriate transponder. You'll find that the usual adjustments you make to get the optimum picture also insure the best audio reception.

Once you've got the right transponder and a good strong signal, it's time to turn to the audio controls on your receiver or stereo processor to dial the program you want. On older units, it's just like dialing a small AM or FM transistor radio. On some of the newer digital receivers, tuning is much easier and the readout tells you when you've got the subcarrier(s) you're looking for.

If it's a stereo program, you'll have to tune two subcarriers, one for the left channel and one for the right. Generally the lower frequency represents the left channel. To channel the sound from your satellite receiver to your stero TV or audio system, you'll need two lengths of audio coaxial cable equipped with RCA phono plugs at the ends. Make sure you feed the appropriate signal to the correct left or right input.

Make sure each channel is tuned optimally, then use the balance control on your stereo amplifier or TV set to make sure the stereo perspective is correct. You may discover that some signals seem to arrive with an excess of noise. Incidentally, if you don't have either a stereo TV set or a convenient audio system, you'll find that a pair of small

Each satellite transponder has a range of audio subcarriers available for carrying not only the sound portion of the video broadcast, but up to a dozen audio programs as well.

powered loudspeakers like the Bose RoomMates can be connected to the outputs of your satellite receiver or stereo processor to provide amplified two-channel sound not only from the audio programs but also from MTV, TMC and other stereo video services.

Better receivers have wideband/narrowband audio switches which enable you to choose a stronger signal in relation to the background noise, but at the expense of full frequency response (narrowband), or full frequency response but with sometimes annoying levels of background noise. The use you'll make of this switch depends on the program material, your ear and the quality of your audio components.

An alternative to the use of the wideband/narrowband switch is a noise reduction feature built into some receivers. The best-known name in noise reduction is Dolby, which helps to explain why several of the best models include Dolby B noise reduction. For the record, that's the same kind found in your cassette recorder and used as part of the Dolby Surround Sound process used to encode feature film soundtracks. The theory behind Dolby is simplicity itself: boost certain portions of the audio signal during recording so that they appear louder than normal in relation to the rest of the music and the underlying background noise. Then on playback, reduce the levels for these frequencies and the background noise which accompanies them. Works just fine when the program material has been properly encoded in the first place. But most satellite audio transmissions are not Dolby-encoded, which means that if you use the Dolby switch on your receiver, you may remove the background hiss, all right—but you'll also lose part of the music. The result is a quieter, duller musical sound.

DNR, or dynamic noise reduction, is another technique used to reduce

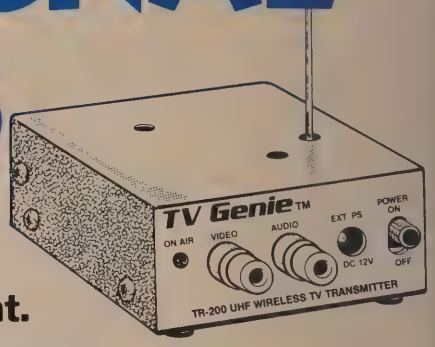
(Continued on page 64)

Audio Programming On Satellite

Satellite	Transpond.	Subcarrier(s)	Name	Schedule	Programming
F1	3	6.3	CNN Radio	24 hrs.	News
	20	6.2	AFRTS Radio	24 hrs.	News, sports, features
G1	3	5.4/7.92	Moody Broadcasting	24 hrs.	Religious
		5.58/5.76	StarStation	24 hrs.	Adult contemporary music
		5.94/6.12	Cokuntry Coast to Coast	24 hrs.	Country music
		6.2	Satellite Radio Net	24 hrs.	Religious
		6.3/6.48	WFMT, Chicago	24 hrs.	Classical music, fine arts, folk music
		7.257	UPI	24 hrs.	News
		7.12/7.56	Satellite Music	24 hrs.	Easy Listening
		7.695	Seeburg Lifestyle Music	24 hrs.	Easy Listening
		8.055/8.145	Stardust Music	24 hrs.	MOR music
	7	6.3	CNN Radio	24 hrs.	News
	13	5.22/5.4	Studioline All Time Fav.	24 hrs.	Adult contemporary music
		5.58/5.76	Studioline Easy Listen.	24 hrs.	Easy listening
		5.94/6.12	Studioline Classics	24 hrs.	Classical music
		6.3/6.48	Studioline Hit Country	24 hrs.	Country music
		7.38/7.56	Studioline Super Hits	24 hrs.	Top 40 music
	15	6.3/6.48	WQXR New York	24 hrs.	Classical music, New York Times news
		7.335	Greek Network	24 hrs.	News, sports, music & features in Greek
		7.425	Italian Network	24 hrs.	News, sports, music and features in Italian
F3	2	6.2	Satellite Radio Net	24 hrs.	Religious
	4	5.58/5.76	KKGO, Los Angeles	24 hrs.	Jazz
F3	6	5.4/5.94	Starship Country	24 hrs.	Country music
		5.58/5.76	Starship Adult Contemp.	24 hrs.	Adult contemporary music
		7.875	In Touch	24 hrs.	Readings from periodicals for the blind
	7	6.2	ESPN Information Net.	9 AM-12:30 PM	Program updates and information
	8	6.3/6.48	Love Sounds	24 hrs.	Religious music
	14	6.3	CNN Radio	24 hrs.	News
	19	5.22/5.4	Studioline Album Tracks	24 hrs.	Current hit albums
		5.58/5.76	Studioline Contemporary	24 hrs.	Contemporary dance music
		5.94/6.12	Studioline Jazz	24 hrs.	Big band and jazz music
		6.3/6.48	Studioline Specials	24 hrs.	Variety music & specials
		7.38/7.56	Studioline Contemp. Rock	24 hrs.	Rock & contemporary music
T3	19	6.2	FM America	24 hrs.	Easy listening & talk with TVRO show Weds. 9-12 PM EST.
W5	2	5.8	Cable Radio Net.	24 hrs.	News, weather, sports, music
	18	5.58/5.76	Sheridan Broadcasting	24 hrs.	MOR, News, sports
AD	4	5.4/5/58	CFNY Toronto	24 hrs.	Rock & contemporary music
	8	6.17	CKO Toronto	24 hrs.	News
	14	5.41	CKAC-AM, Montreal	24 hrs.	MOR music in French
		6.17	CITE Montreal	24 hrs.	French-language easy listening
	16	5.4/5.58	CBC French Net. (FM)	24 hrs.	Variety
		5.76/5.94	CBC FM Network	24 hrs.	Classical and contemporary music, talk, news
	18	6.17	CIRK, Edmonton	24 hrs.	Progressive rock
	20	6.12	CBM-AM, Montreal	24 hrs.	Talk, current affairs, variety
	22	6.17	CBC FM Network	24 hrs.	Classical & contemporary, talk, news
	23	5.41	CKRW, Whitehorse	24 hrs.	Country & western music
	22	7.42	CFMI, Vancouver	24 hrs.	Soft album rock
	24	5.4/5.88	CBC French Network	24 hrs.	Variety in French
		5.76/5.94	CBC FM Network	24 hrs.	Classical & contemporary music, talk, news
		6.12/6.3	CBC FM Network	24 hrs.	Classical & contemporary music, talk, news
F4	3		Georgia Radio News	24 hrs.	News & sports
	7	5.58/5.76	Family Radio Network	24 hrs.	Religious variety
		5.94/6.12	Family Radio Network	24 hrs.	Religious variety
	21	6.2	National Broadcast Museum	24 hrs.	Nostalgia—Big bands, old radio shows

FCC Shoots Down a Great Gadget!

CORDLESS SIGNAL PROCESSORS



The FCC labeled those marvelous little cordless TV transmitters illegal but the manufacturers are not giving up a lucrative market without a fight.

By Robert Angus

Wouldn't it be great if there were a device which you could attach to your satellite receiver which would enable you to watch The Sports Network or Discovery Channel on the TV set in the bedroom or the kitchen as well as the living room without the need for additional cabler? Or to watch sports from satellite on the patio while the lady of the house catches up with the soaps in the kitchen?

Well, you can—or at least, you could, before the Federal Communications Commission issued a notice back in October making such devices illegal and threatening anyone who uses one with the possibility of a $10,000 fine and/or a year in jail for each offense. And if you read the fine print in the regulations and in this article, you just may be able to do it still, without the fine or fear of jail.

Just about a year ago, ads began appearing in satellite publications, video magazines and electronics hobbyist journals for products which would do just that. Sporting such names as TV Genie, Videocaster, The Rabbit, Video Magician, and the like, and price tags which ran from $39.95 to $350 or so, the devices have evoked a good deal of interest and inquiries from TVRO owners and other electronics enthusiasts, if not much in the way of sales. The results they produced ranged from the horrible or barely watchable to quite good and even first-rate, usually in accordance with the price being asked.

What bothers the FCC about these devices is that at least some of them are miniature transmitters, which convert the RF output signal from a satellite receiver, videocassette recorder, cable box or video camera to a VHF or UHF TV channel which can then be picked up through the antenna on any TV set in the house. The trouble is that the signal may also be picked up on your neighbors' TV receivers, or may interfere with signals they want to watch. Some of the units radiate more or less indiscriminately over a fairly wide area and others cause interference on channels adjacent to the one being used for rebroadcast or even unrelated channels.

Revox of Switzerland has introduced an infrared transmitter for both audio and video applications that does not violate FCC rules, but operates on a line of sight only basis requiring multiple units for multiple room use.

Take the case of the VideoCaster, a device ordered off the market early in the FCC's investigation. Offered originally for $149 (but sold for $49.95 just before the FCC pulled its plug), the device looked like a can of Dinty Moore beef stew painted black. Its function was to convert the incoming RF signal from almost any video source into a radiated signal which could be picked up on Channel 3 or Channel 4 of a TV receiver. I found that the VideoCaster's results inside the home were variable, but outside they were remarkably predictable. I hooked the unit up to the output of my Kenwood receiver and set the switch for Channel 4 (there's a strong Channel 3 in my area). The kitchen receiver picked up the picture, all right, but the colors came in stripes and the whole thing looked like a very weak off-air signal on a badly tuned set. A second receiver in the upstairs bedroom did somewhat better, producing a reasonably good fringe-area signal. But the image on the patio set, farthest from the VideoCaster, produced very poor picture and lots of hum in the audio.

By accident, I discovered that moving the VideoCaster relative to the TV sets affected the pictures they received, both in signal strength and quality. By positioning the can on its side, I produced a markedly better picture on the patio set, a somewhat less satisfactory one in the

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upstairs bedroom. I also discovered that whenever the unit was in use, it produced a herringbone pattern on every set tuned to Channel 3.

Next, I took a portable TV set out for a walk. I live in a rural area where the neighbors aren't inclined to complain about some of my electronic experiments. And a good thing that they don't live closer, for I picked up radiated noise as far as 1200 feet away, nearly a quarter of a mile. As far as I could tell, there was no way of confining the VideoCaster-signal to my own house and I can't imagine how it might interfere with TV reception if used in a city apartment building.

Fortunately, the VideoCaster and other Channel 3/4 amplified modulators were not the only units on the market. At the other end of the price scale is the Hawkeye, a device developed primarily for use in professional security systems and for broadcast use where it's impractical to run long lines between video cameras and recording or broadcast gear. It uses a UHF channel to retransmit the signals it receives, in this case Channel 14 which inventor Nick Messemaker says presently is not in use anywhere in the United States (a cheaper version, the TV Genie, also uses Channel 14). I hooked up the Hawkeye in the same manner as I had done with the VideoCaster and checked out the audio and video signals on three TV receivers located throughout my home. The results were excellent, with audio and picture quality comparable to that on the main receiver in my living room. With my portable TV receiver, I was unable to pick up any useable signal outside the house, and no detectable radiated signal more than 60 feet from the Hawkeye. Of course, my radiation tests lacked the comprehensiveness and sophistication of the FCC evaluations. I was unable to determine whether there was interference on some other channel, but phone calls to my two closest neighbors indicated that their sets were immune to whatever I was doing.

Orphans

Messemaker and some other members of the signal distribution community believe that there should be a place for over-the-air video retransmitters because they are less expensive to make and easier to install and use than hard-wired video distribution systems. Since most U.S. households now have two or three TV sets and at least as many program sources, they say, the public wants systems of this type. Accordingly, RF Power Labs, a manufacturer, and Robert Greene, an inventor, petitioned the FCC to make rules which would allow operation of UHF and VHF cordless retransmitters. Their petitions were opposed by the National Association of Broadcasters, the Association of Maximum Service Telecasters, RCA, NBC and Ma/Com on the grounds that the devices had the potential to interfere not only with properly-licensed existing TV stations, but also with stations which might be licensed in the future. In the absence of data from RF Power and Greene that such interference would not occur, the FCC turned the petitions down, then issued a public notice proclaiming that such devices are and always have been illegal under Part 15 of the FCC rules.

Messemaker says he and several other interested parties are conducting tests now which could convince the FCC to change its mind. He and others feel it's absurd to reserve a UHF frequency like Channel 14 in perpetuity in all parts of the country against the possibility that someone, somewhere, will be granted a license to operate on it. He also argues that he and other responsible manufacturers agree in the need to engineer and build their products carefully so that they do not radiate or cause interference on other channels.

"If my satellite dish is 'ugly' what is that on your roof, a work of art?"

The FCC...issued a public notice proclaiming that such devices are and always have been illegal under Part 15 of the FCC rules.

On the surface, Messemaker's Hawkeye would seem to violate the same two provisions which encouraged the FCC to force the TV Genie off the market: it operates on a broadcast frequency (channel 14) and it does not require a federal license to operate. John Reed of the FCC Office of Science and Technology, the man who lowered the boom on the other units, says that two provisions—a retransmitter that operates at a frequency considerably higher than the UHF band (and hence presumably wound require an expensive downconverter to make a useable signal available to each receiver) and a license from the FCC to operate it—are essential before the federal agency will authorize any retransmitters. But he says Messemaker's unit comes under a different section of the FCC rules, since it's not intended for use as an RF retransmitter. So the unit continues to be sold and used, although Hawkeye currently is soft-pedalling its use with VCRs and satellite receivers.

Since the order was issued, two manufacturers appear to have gone

(Continued on page 80)

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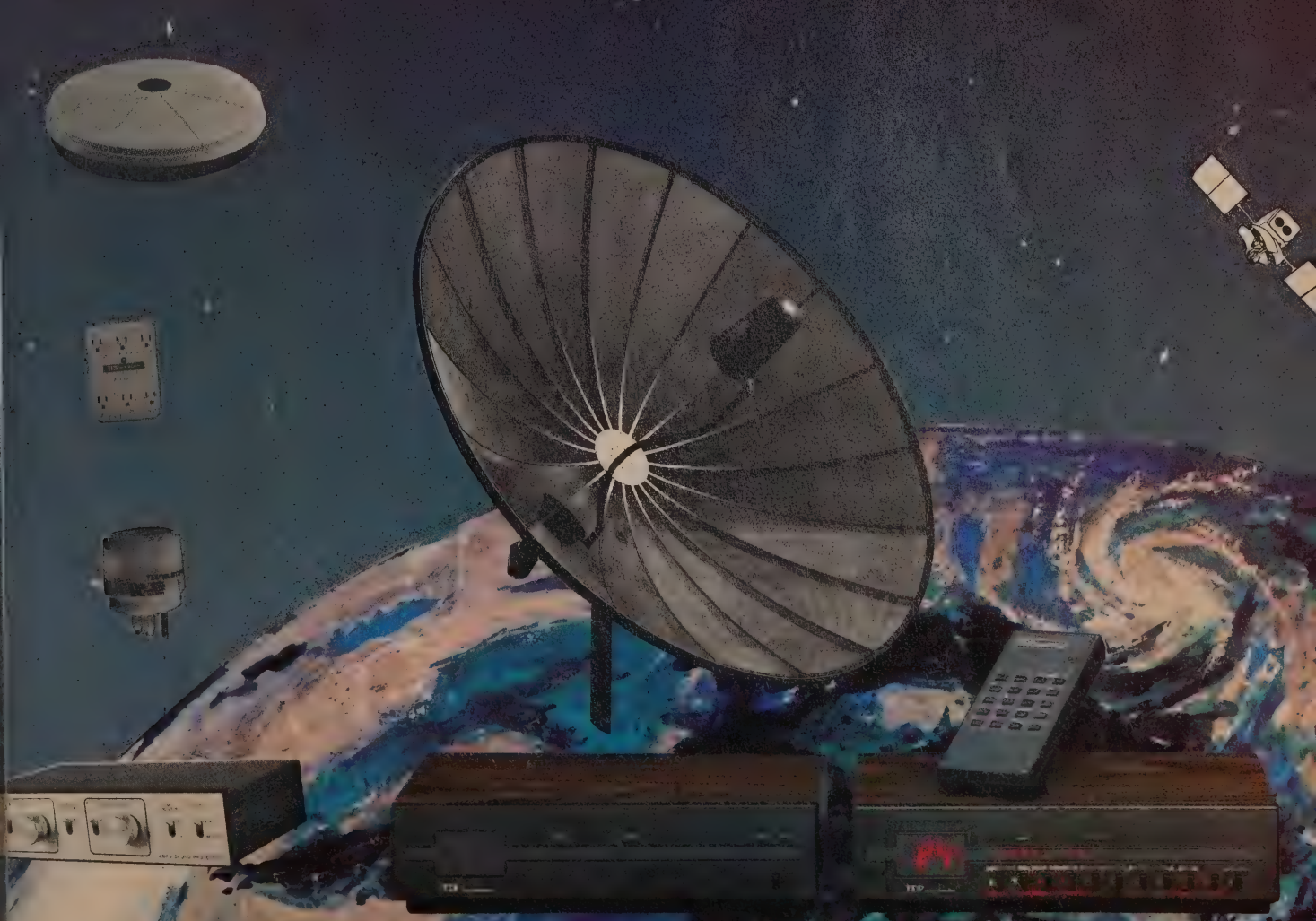

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DISHES BY MAIL
THE PROS AND CONS

Our undercover shopper finds that there's more to buying by mail order than just filling out a coupon.

By Scott Mehno

Illustration by Sean Kevin Gaffney

As the home satellite industry moves out of its infancy, there are still a few reminders from its early days. One of the more nagging problems is that of mail order companies that make erroneous and fraudulent claims about the satellite products they want to drop off on your doorstep. If you have ever flipped through the back of any hobbyist magazine, you've probably seen many such ads. If you've ever though about taking a chance on one of these "Low, low, low priced" satellite antennas there are a few things you should know first, based on my own research on the dish-by-air-mail connection.

First of all, not all companies who sell by air are out to get you. Unfortunately, most that I surveyed are plagued with misinformation, bad business practices, and meaningless guarantees for a product that most consumers have a lot of questions about to begin with. I sent in several letters asking for information about the product some of these companies were selling. I received quick responses from most of the companies I wrote to. The first thing I noticed was the similarity of the responses.

Mail order companies usually hit you with what they consider their three key advantages over store-front retailers. Number 1, they bombard you with the low, low price. What they don't tell you is how they had to undercut both the distributor and retailer to arrive at that price. Number 2 is their do-it-yourself installation plan. Upon calling one of these companies to get more information about D-I-Y, I was told "A dish can be set up in a half an hour, if you know a little about 'electronics'." That's bunk. A satellite antenna properly installed and tested by experts takes as long as it's needed to get it right (the minimum is generally about 8 hours). Almost everyone has memories of some Christmas when even putting together the simplest toy was an all-day affair, and that was delivered from Santa. A satellite dish is a complicated piece of hardware and should be treated like one. Stay away from any company making do-it-yourself sound like a piece of cake. The number 3 claim the shakier companies usually make is the one-year warranty to repair broken equipment. Closer inspection of the promise showed that eight of 11 companies I polled were citing the manufacturer's warranty, thereby avoiding any responsibility of their own. One mail order proprietor told me that "Servicing isn't important. Your local retailer is only going to service a product a certain amount of time. Most dealers don't know how to do repairs. Everyone sends faulty equipment off to the manufacturer."

The truth of the matter is that most reputable local dealers will service product as long as you own your dish. It's true that for some breakdowns the equipment must be sent back to the manufacturer, but for the most part, equipment received by mail, installed by yourself, then sent back to the manufacturer may end up with a 2 to 3 month turnaround time. Manufacturers always go through their local retailers first for repair, and many now are publicly disowning themselves from any mail order faction whatsoever.

One of the most often used techniques of the more irresponsible mail order houses is to quote big name brands in their price sheets without the authorization of the manufacturer. Mike Brubaker, vice-president of sales for R.L. Drake, says it's hard for manufacturers to stop these kinds of practices. "It's a difficult situation. Some of these companies have ways of getting the equipment through different distributors. We have a legal staff to

(Continued on page 76)

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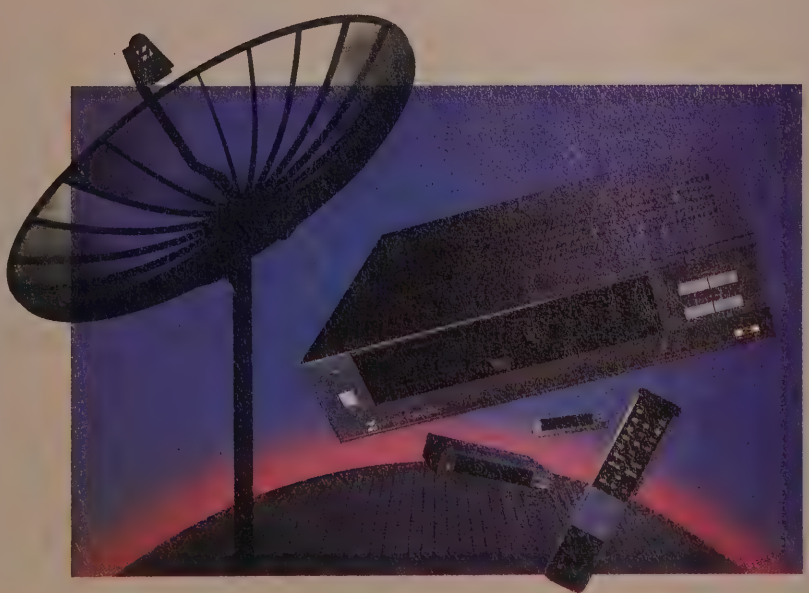
For complete details on the Hytek "Dream System", see your Hytek/Dexcel Dealer.



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A Dish For Every Budget

Buyer's Guide

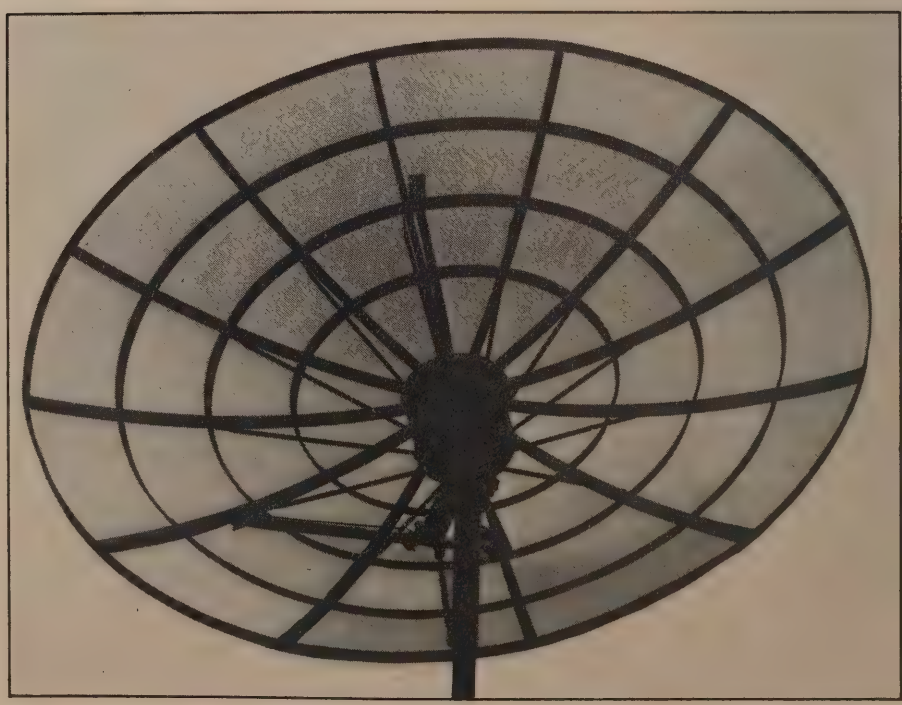
By Ron Daniels

There are literally hundreds of dishes to choose from when system shopping and they can cost from a few hundred dollars to several thousand. The dish represents the largest and most costly component of most satellite systems and one which should serve you for many years to come. Dishes as well as other home satellite TV components have not only come down in cost but have also improved in quality as well.

A word to the shopper. Prices listed in this buyer's guide can vary from region to region and from dealer to dealer. Manufacturers also have the right to change them at any time. It's the wise buyer who gets more than one quote for the items he wishes to purchase. Prices listed here were given by the manufacturers shortly before printing and therefore may be subject to change.

HASTINGS ANTENNA 10-PFM

Hastings Antenna has introduced its new 10-PFM mesh satellite antenna for home use. The 10-foot, 12-petal dish is constructed of .040 aluminum mesh and features a smooth, attractive appearance with an optional powder black finish. The 10-PFM has a true polar mount, heavy-duty turnbuckle and adjustable offset to ensure usability throughout the Continental U.S. Because it achieves surface accuracy without a thousand bothersome steel clips, the HAI goes together in one-third the assembly time of conventional mesh antennas. Focal length is 39.5 and the F/D is .375, shipping weight with mount 195 pounds. Suggested retail is $795.



HOUSSEN MARK 2

Houssen Tech Inc. offers their Houssen Mark 2 4-1/2 foot dish. The company claims an improved version of the dish gives better gain, less earth noise interference and two piece construction for ease of transportation. Each dish comes with a detailed graphic installation manual for ease of installation.

ECI 11

The ECI 11 has a proven permance track record and is one of the finest mesh antennas available. ECI limits its production of the ECI 11, an 11-foot diameter antenna, resulting in demand exceeding supply but for the true satellite videophile the wait is worth it.

The EC is a deep dish with an f/D of .29 and a gain of 41.7 all verified by an independent testing lab.

The antenna is assembled from eight interchangeable preassembled reflector panels with the mesh securely attached to the panel structures.

All hardware is stainless steel and hot dipped polar mount head assures maximum protection from rust.

ECI also offers an optional galvanized tripod stand and feed system.

Shipping weight is less than 250 pounds and the antenna is avilable with an optional polyurethane paint coating in black.

The manufacturer claims total assembly time of about 45 minutes.

Suggested retail price about $1000.

DANEX MICROWAVE, INC.

Danex reflectors are spun from .090 sheets of aluminum to a tolerance of five one thousandths of an inch according to the company.

The company offers several diameter dishes including a 6-foot and 7'4" reflector.

The 7-foot reflector has a specified gain of 38.4 dbi, a focal length of 27.5 inches and an f/D of .31. The reflector weighs 63 pounds and the steel mount is 50 pounds.

Danex utilizes a five step painting process to coat each reflector including an etch bath to remove grease and other deposits plus securing a rough surface for the coating to adhere to. A polyester powder coat is applied and baked into the surface with a heat treating and curing process.

The true polar mount offered by the company is made of steel and the dish and mount have a wind survival rate of 100 mph.

The true polar mount offered by the company is made of steel and the dish and mount have a wind survival rate of 100 mph.

The 6-foot reflector has an f/D of .38, a focal length of 27.5 inches and claims a 70% efficiency rating. The 6-foot reflector weighs 42 pounds for easy handling.

JEDI SATELLITE ANTENNA SYSTEMS

Jedi produces single and multisection fiberglass dishes for the home market.

The Jedi series of antennas all carry a seven-year factory guarantee and each unit is serialized for protection against theft.

The Jedi-10 is a two-piece 10-foot fiberglass antenna with a .3 f/D, a 36.25" focal point and a specified gain of 40.2 dbi.

The Jedi-10 weighs 180 pounds and is reinforced with six claw-style braces for mounting. Jedi also manufactures its own mount for each of the antennas. Suggested retail price is $000.

Jedi-8 and 7.5 are single piece fiberglass antennas with rugged ring mount molded into the back of the antenna for strength and durability.

The Jedi-8 is an 8-foot antenna with .3 f/D, a focal length of 29 inches, and a specified gain of 38.5 dbi.

The Jedi-8 weighs 95 pounds, and retails for $000.

The Jedi 7.5 is a 7-1/2 foot antenna, single piece construction of molded fiberglass, an f/D .275, and a focal length of 25.375 inches and a specified gain of 38.5 dbi. The 7.5 weighs 95 pounds, and retails for $1200.

HERO SUPER TENNAS™

If you ever had an opportunity to attend one of the home satellite industry's trade shows you would see a very large dish parked just outside the convention hall with hundreds of wires running to it. For the past few shows that antenna has been a Hero and the proof that it is an excellent performer can be found inside the hall where all those wires are running dozens of satellite receivers.

The Hero Super Tenna series of antennas are not for everyone considering the size and price. The smallest Super Tenna currently available is, however, directed to the home market and is called the Super 7. From there the diameter is up, 10, 13, 16, 20, 25, and 32 feet.

The commercial grade mesh (aluminum) antennas are among the Cadillacs of the industry and with an horizon-to-horizon motorized mount is an unbeatable combination. The Hero H2H drive is very similar to ones used on military and by the NASA tracking dish antennas and is as heavy duty as the Hero line of antennas.

The Super Tenna series boasts some of the highest gains in the industry starting with the 10-foot model at 40 dbi all the way up to 51.7 dbi for the 32-footer.

The reflector is computer designed and is a flattened expanded aluminum shaped to exact parabolic contours. Aluminum fabricated trussed ribs add rigidity to hold the parabolic shape at designated wind loads up to 125 mph.

A special drill attachment is included with each antenna which allows the installer to rapidly install the antenna according to the manufacturer. A 1/4-inch drill, screwdriver, and adjustable wrench are all that is necessary to install the antenna. The Super Tenna series also offers adjustable feed mount and digital remote controller for the horizon-to-horizon motorized positioner/mount.

Hero Super-7, a seven-foot diameter antenna with .29 f/D, 37.9 dbi gain, and a standard fixed AZ/EL mount for use with 4GHz or 12GHz has a suggested retail price of $515. Seven foot with polar mount $660, with horizon-to-horizon polar mount (motorized) $800.

Hero Super-Tenna 10 foot with .3 f/D and 40.6 dbi gain with polar mount $985. Ten foot with horizon-to-horizon motorized polar mount $1,130.

Hero 13 foot with .3 f/D and 43.0 dbi gain with polar mount $1,420; with horizon-to-horizon motorized polar mount $1,565. For Polyester thermset electrostatic coating (available for 10- and 13-foot antennas) add $250.

Hero 16-foot with 44.7 dbi gain with horizon-to-horizon motorized polar mount and modular plug in motor with Tracker IV control box, coax, and pedestal mount $5,595.

Hero 20 foot with 44.5 dbi gain, horizon-to-horizon motorized mount, controller and cables plus pedestal mount $8,995.

Hero 25 foot with horizon-to-horizon motorized mount and cables plus controller $16,875.

Hero 32 foot with cables H2H mount, heavy duty pedestal $50,000. This antenna is available only by custom order.

Antenna options include mesh for Ku-band applications, color coating, and 110 VAC motors with remove control and cables.

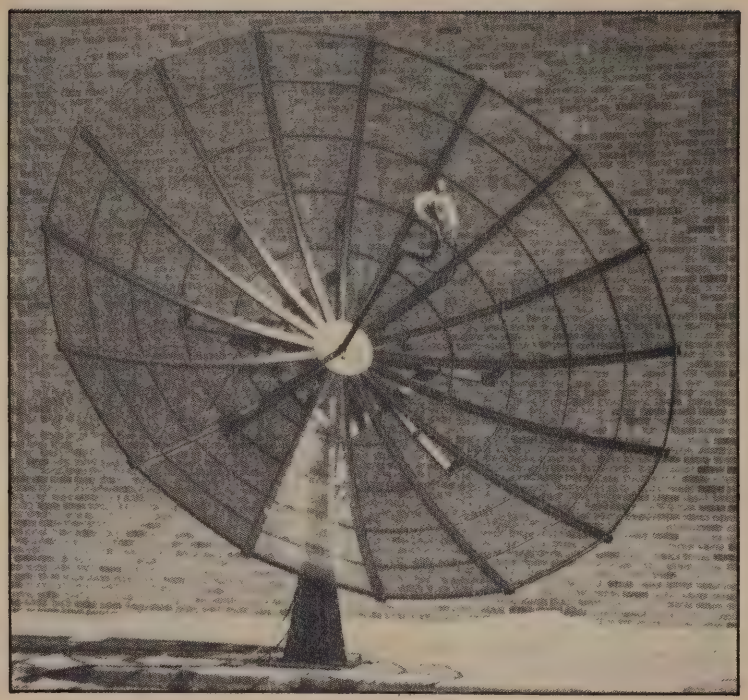
H2H MOUNT AND THE PARACEPTOR

Conifer has introduced new 8, 10, and 12-foot diameter perforated aluminum antennas that also include a horizon-to-horizon mount.

The Perforator series is a radical departure from Conifer's original design and offers a unique interlocking rib design for easy installation.

Conifer's heavy duty H2H mount and drive feature machined-steel gears, built-in limit switches, a heavy duty 35 VDC motor and choice of Reed or Potentiometer, all contained in a rugged weather proof housing.

Prices very according to antenna size.



CONIFER

Conifer Corporation introduced the first "dealer ready/consumer ready" component matched satellite system, and also produces some of the finest aluminum mesh and perforated dishes on the market today.

Conifer's AN-1200C 12-foot mesh dish has stood the test of time and is usually incorporated into high-end systems, and will work exceptionally well even in fringe signal areas like Canada, Mexico, and the Caribbean.

The aluminum Micro Grid mesh surface is prebonded at the factory to a high strength aircraft grade aluminum alloy frame eliminating many hours of field assembly for the dealer or the do-it-yourselfer.

The use of the Micro Grid expanded aluminum surface causes a diffusion of solar heat to protect the LNA and feed and features a 55% open area to reduce wind loading and weight.

All aluminum and steel parts are factory finished with a Polymer coating which is electrostatically applied to protect againt rust and other corrosive elements.

The AN-1200C is certified for 2° spacing, has a wind operational speed of 60 mph and a wind survivability of 100 mph, and weighs 300 pounds. The manufacturer states that no single part weighs more than 50 pounds, and the 16 panel sections weigh four pounds each.

The Conifer AN-1200C has a specified gain of 42.0 dbi.

The antenna can be ordered with either a pier type (PI-base) or pedestal type base (PD-base).

Antenna color options include black, tan, forest green, and white.

The AN-1200C should retail for about $1,200.

DH SATELLITE

DH Satellite is one of the largest producers of spun aluminum antennas currently available but you're not likely to find their corporate name used with their produce. DH manufactures many of the "private label" antennas for distributors, and with their current output of over 5,000 antennas a month it is likely that if you purchase a spun aluminum antenna it will have been manufactured by DH.

Spun aluminum has been the choice

of the military, NASA. TV stations. and telephone companies for microwave antennas, and indeed many of the pioneers of the industry assembled their first systems with surplus parts including spun aluminum antennas. They are a tried and true antenna and have seen many years of service in other communication applications.

DH Satellite antennas range from 9 foot heavy aluminum (1/8th inch) with f/D's ranging from .33, .39, .30 to their standard aluminum 9 foot (.090 gauge) with the same f/D range. The company also produces an 8, 7, 6, 5, and 4-foot aluminum antennas as well as a 6-foot antenna. Prices vary from dealer to dealer.

Complete Guide

SPORTS SPECTACULAR

No Time-Outs In SAT-TV's Coverage!

If you're a sports nut you'll love satellite TV, but finding that particular game could be quite a problem until now.

By Phil Spacer

Whether you're an armchair quarterback or a couch coach and you eat sleep and breathe sports then home satellite television delivers sports to you like no other system can.

On any day of the week, at almost any hour you'll find some type of sports event being transmitted via satellite. Your satellite dish becomes a catchers mitt for a ringside seat, or a spot on the 50 yard line or a front row view of that all important putt. Currently there are a pair of channels that transmit sports on a 24 hour basis—ESPN and The Sports Channel—but there are literally dozens of other channels that transmit collegiate and professional sporting events just about every day of the week and weekend.

During the football season as many as a dozen NFL games can be received on a Sunday afternoon and evening, and Saturdays are filled with collegiate grid fair. Basketball and hockey seasons also bring with them a wealth of games on satellite.

The general rule of thumb is that anytime two opposing teams are more than a few hundred miles apart, and they are playing a game together, the game will be transmitted via satellite for broadcast on the visiting teams home TV station. Considering there are more than a dozen games of any one particular sport a night most games would fit into this category.

For the true sports fan this means a wealth of games to choose from, particularly for those who live far away from the major metropolitan centers and would otherwise not be able to attend these games in person—which applies to most owners of satellite systems.

There are approximately one dozen satellites that can be seen by home satellite systems on the North American continent. Of that dozen satellites there are about 250 channels available for part time programming which includes sports. That may seem like a lot of channels to have to go searching through for a particular event so we have narrowed it down for you with the accompanying chart.

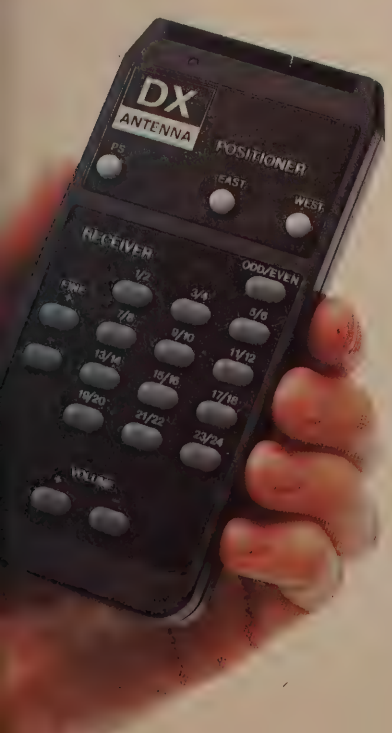
While you may argue there are programming guides that will tell you where a specific game can be found on the satellite, we have found that to be not the general rule. While many of the programming guides do list some of the sporting events they seem to fall far short at listing all of them. This is not entirely their fault because they receive very little (none) cooperation from the major networks and do not fair much better with the independent broadcasters of sporting events.

(Continued on page 66)

THE NEW DX ANTENNA POSITIONER.

Everything you expect from the leader.

Antenna by Paraclipse.



Finally, there's a totally integrated home satellite reception system, with perfectly matched components that look great and work beautifully together. And it's from DX, with all the quality features and superior performance you've come to expect from us. Result: the picture-perfect system you've been looking for.

The New DSB-400 Antenna Positioner
Incorporating advanced microcomputer technology, it delivers out-of-this-world features at a down-to-earth price. Features like full programmability for 24 positions including polarization and skew adjustment; reliable single chip circuitry, and a nonvolatile 10-year memory. It has user-friendly controls, programmable limits, and a full-function remote control unit with parental-supervision button.

The DSB-700 Receiver
It has the DX quality features you've looked for, but for much less than you'd expect to pay. **Block downconversion** for multiple-TV hook-up, picture quality comparable to commercial receivers, and descrambler compatibility. It's capable of both 4 GHz and 12 GHz reception and has an infrared remote control.

From every standpoint—quality, performance, price—we've got what you've been looking for.

DX ANTENNA

DX COMMUNICATIONS, INC.
A Subsidiary of
C. Itoh & Co. (America) Inc.
10 Skyline Drive, Hawthorne, NY 10532
(914) 347-4040

SUN BLIND!

WHEN SOLAR OUTAGE HAS ITS DAY

It's that time of year when the Sun can cause serious harm to your system. We tell you how to protect it.

By Phil Spacer

A biannual event is about to occur that will send many new owners of home satellite systems, and indeed subscribers to cable systems, scurrying to their telephones to complain about loss of video on their TV's. It's called "Solar Outage" and not only will it offer a few minutes of frustration for millions of viewers, but could cause serious damage to the home satellite system's components at the dish.

Solar outage occurs twice a year as the sun makes its northerly trek across the Equator in mid-March and when it reverses that trip in mid-September.

If you remember the basics of how the geosynchronous satellites are orbiting directly above the equator at about 22,300 miles then you will understand exactly how a solar outage occurs.

The communications satellites viewed by home and cable satellite systems are placed in the geosynchronous orbit directly above the equator so that they orbit the earth at the same rate the earth rotates—thus appearing to be stationary. As the Sun moves across the equator, with the onset of spring and Fall at some time during the day the Sun will be lined up directly—or nearly directly behind the satellite. Any earth station (satellite dish) aimed at a satellite which is in alignment with the Sun experiences a solar outage. The sun in effect is a powerful radio transmitter that overwhelms the weak signals being transmitted by the satellite which becomes degraded or is completely lost in all the "noise" created by the Sun.

As the Sun continues it's daily trek to the north and west each satellite in the geosynchronous orbital belt is affected for a period of time lasting

(Continued on page 76)

Backyard Pleasure Machine

Choose from over 120 channels of action sports, instant news, stereo music, inspirational religious, revealing adult, and more. Plus movies, movies, movies and more movies.

By Quentin Breen

First there was television. You could watch five, maybe 10 local stations along with the 3 major networks. and maybe a couple of independents and PBS.

Then came cable TV. You could watch those same stations, ghost-free, plus maybe a dozen or so satellite channels. But for a monthly charge.

Now, a high-tech spin-off of the US space project will forever change the way your family watches TV.

With your own Home Satellite Television System you can pick up over 120 national television channels with razor sharp clarity. First-run movies, top sporting events, global news, adult entertainment, children's programs and religious shows, many in full stereo, 24 hours a day. Even NBC, ABC and PBS are on the "birds".

FREEDOM OF CHOICE

As a football fan, I enjoy selecting my own personal "game of the week" from the 13 carried on satellite every Sunday. No matter what game my local TV station is carrying.

My friend, the news junkie, watches the uncut network news feeds on their way to New York by satellite. He likes to tell me about the news stories that never made it to the nightly news.

If you have specialized viewing tastes, a satellite dish may be the only way to exercise your freedom of choice. Most cable systems simply don't carry Yonkers Horse Racing, Canadian TV stations, or the NASA space shuttle channel. And no cable system carries American Extasy or the Fantasy Unrestricted Network.

And because of a new law signed by President Reagan in October of 1984, it's all perfectly legal.

Just a few years ago you could have expected to pay as much as $10,000 for a backyard dish. Even today, most local dealers are selling backyard dishes for over $3,000.

Satellite Express has cut this cost in half. Through our massive buying power, we get truck load prices - and pass the savings directly on to you. You can now buy our very best top-of-the-line, full infrared remote-control, stereo, motorized 10-foot Home Satellite TV System for only $1,599. We call it our Connoisseur Series. And you can install it yourself in a Saturday afternoon, and pocket another $600 in savings!

THE 10′ BOLT TOGETHER DISH

The Connoisseur dish is a full ten feet in diameter, to pull in every one of those incredibly weak satellite signals.

Eight factory pre-meshed panels bolt together with 24 bolts for extraordinary accuracy and quick assembly. Another eight

bolts complete the job. It's the easiest 10′ assembly we've ever seen.

It's also one of the most sensitive dishes, providing a gain of over 40dB at 4 gigahertz. But that's no surprise. It's manufactured for us by DH Industries, the largest satellite antenna manufacturer in the world.

The black matte see-through mesh reduces wind load and lets the dish blend with its surroundings. Spray-painted a neutral or green color, it becomes almost invisible.

A PAIR OF WINNERS: THE MAXUM TWINS

Inside, next to the TV set, are the two components you most often see: the satellite receiver and the antenna positioner. They are also the most important. Ours are made by one of the industry's top designers: MAXUM.

The MAXUM RC-011 Stereo Receiver has one of the lowest IF thresholds around, under 7.2 dB (that's good). And it has a built-in stereo decoder for dazzling high-fidelity sound. The built-in A/B switch automatically connects your TV to its regular antenna or cable feed whenever the satellite TV System is turned off.

The receiver is fully quartz-synthesized using a precise Phase Lock Loop circuit, and it is microprocessor-driven with digital channel selection and LED display. It comes with regular TV output (Ch 3 & 4), video feed (for projection TV's or studio monitors), and separate left & right audio jacks for connection to your home stereo system. Of course, it's "descrambler ready."

The matching MAXUM RC-010 Antenna Positioner controls a rugged weather-proof Von Weise motor at the dish, using a microprocessor which remembers the exact position of each satellite. Under your command, the positioner automatically points the dish at any one of up to 75 different satellites.

And its 30-LED antenna position bar indicator and digital-display readout immediately tell you what bird you're watching and its location in the satellite arc.

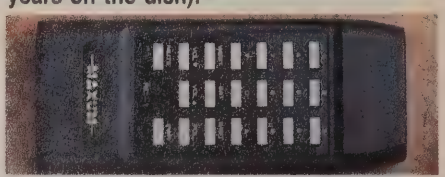
Like the matching receiver, the MAXUM antenna positioner is a striking, clean, low-profile unit which makes a great addition to any stereo or video entertainment center.

IT'S ALL DONE BY REMOTE CONTROL

And now the best of all: All major functions of the MAXUM receiver and MAXUM positioner can be performed by using the hand-held infrared remote controller. You can change channels, move the dish from one satellite to another, adjust the sound, and switch to your regular TV channels - from across the room.

EVERYTHING YOU NEED IS INCLUDED

Each Connoisseur System includes everything needed for a complete installation: feedhorn, 75°/50dB low noise amplifier or LNB, 120′ pre-connectorized cable set, weather cap for out-door electronics, and full manufacturer's one year warranty (5 years on the dish).



We even provide a package of tools and a computerized Satellite Tracking Wall Chart of all the satellites that you can see from your precise location.

And, our copyrighted 10-Step Installation Instructions make hooking up your satellite system a snap.

TRY THE CONNOISSEUR SYSTEM RISK FREE

Wait til you tune in 120 channels of beautiful satellite television. You won't believe it. The stereo sound of the music channels is breathtaking. And the convenience of full IR remote control is a real joy.

If you're not 100% satisfied, simply return the system in its original boxes to Satellite Express within 15 days for a full refund.

To order your Connoisseur Home Satellite Television System risk free with your credit card, call toll free, or send your check for Satellite Express' breakthrough price of just $1,599. (Shipped via truck; freight collect). Order No. 1107. NV res add sales tax.

Bypass the boring humdrum of ordinary TV. There's a world of new television entertainment awaiting you - direct from space! Join the millions of people who are enjoying satellite television today.

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For credit card orders call 24 hours a day 7 days a week

CALL TOLL-FREE....

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Programming Highlights

From A To Z On Satellite TV

(Note: All times listed are Eastern Standard)

AMERICAN MOVIE CLASSICS SATCOM F4 TRSP. 10

Christmas came early to AMC in 1985 and Santa's helper turned out to be none other than Ted Turner. When Turner bought MGM, (with an eye toward using the MGM film library for WTBS) AMC took him to court since it had just inked an exclusive deal to feature MGM classic films on its service. The court decided in AMC's favor to the tune of $50 million, which AMC is using to make vast programming acquisitions. AMC's settlement buying spree includes 71 Warner Brothers pixs, one half to be aired in 1986, the second half in 1987. Also, through a deal with ABC Video Enterprises, AMC has picked up 21 David O. Selznick films, among them "Rebecca," "Spellbound," "Notorious" and "Intermezzo," for play over the 86-87 period. Another 100 movies have been acquired from New Century Films, all of which give AMC more access to old movies than any of its competitors. To give these films a proper showcasing, AMC has announced plans to change its current format by adding day and night themes and is toying with the idea of using non-film products during the day.

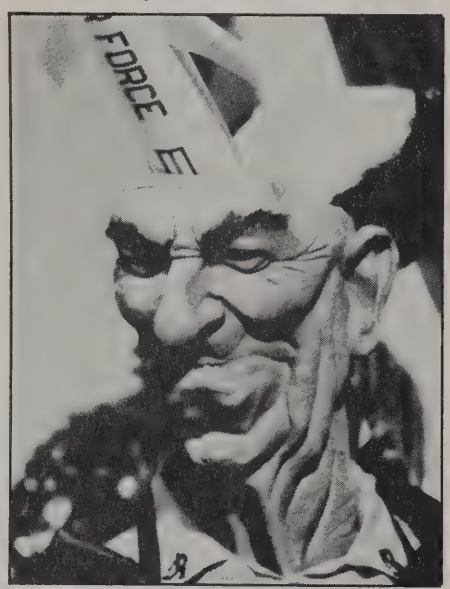
ARTS AND ENTERTAINMENT SATCOM F3, TRSP. 24

Beginning in March, A&E adds three former broadcast network series, "Buffalo Bill," "Air Power" and "The Twentieth Century," to its lineup. Of this trio, Buffalo Bill should do very well for A&E since, during its network run this often controversial comedy gained a rather loyal audience. Dabney Coleman stars as Bill.

A&E's March flock of movies, comedies and specials should also prove a roaring success. From such offbeat farces as "Out of the Blue," a 1947 offering about a man and a corpse in Greenwich Village, to another '47 classic, the English version of Dicken's "Nicholas Nickleby," to specials on Mack Sennett comedies, the evolution of music, the continent of Africa and one of artist Marc Chagall's last interviews, A&E seems to have something for every cultural lion and chuckling lamb in its viewing audience.

Top shows to watch on your satellite system.

By Susan Easton



President Reagan is among the public figures satirized on Spitting Image a new comedy series on Cinemax.

BRAVO SATCOM F4 TRSP. 2

To celebrate its fifth anniversary on the air, Bravo, the only national premium service dedicated to featuring films and performing arts specials from around the world, treated itself to a facelift and some new background themes. Bravo's new look incorporates state-of-the-art animation, and special effects like computer raster graphics, rotoscoping, streak and slit-scan photography, which are said to produce something resembling a hologram. Bravo's programming (two thirds of which in '86 will comprise American independent, foreign and art films, jazz, dance, music and theater specials) may not be your cup of tea, but it sounds like a good place to catch up on the latest video techniques.

CBN SATCOM F3 TRSP. 8, GALAXY 1 TRSP. 11

In a most ambitious statement of its goals, CBN has gone on record with a plan to fill its entire primetime line-up with original programming, perhaps as soon as 1987. To get the ball rolling, CBN has prepared a new sitcom and a musical variety show to debut in the Spring of '86. In the meantime, CBN is relying on a collection of classic films, and reruns of former TV series, including a cluster of domestic comedies—Father Knows Best, The Mothers-In-Law, and Hazel. New to the herd of programs in its Weekend Westerns package (Wagon Train, Roy Rogers, The Munroes), are "Father Murphy," and the granddaddy of them all, "Gunsmoke." Old golds aside, CBN is serious about becoming a network with an identity all of its own. Joining its recently premiered Washington based "CBN News Tonight" will be "Newslight," a weekly digest of headlines from the world of religion. Another lofty CBN entry is a weekly half hour video magazine on religious issues, produced by the United Methodist Church.

C-SPAN GALAXY 1 TRSP. 13

Although it usually keeps tabs on the amount of public support behind important issues, C-Span recently took a moment to report on the size of its own constituency. The official tally shows that 23 million homes, or a 63% majority among the 36 million cabled homes in America, now receive C-Span. That's a lot of clout.

THE DISNEY CHANNEL GALAXY 1 TRSP. 4-24

In keeping with the trend toward updating your old favorites, The Disney Channel has signed Hayley Mills to reprise her dual role of twin sisters, separated by their parent's divorce, in "The Parent Trap II." Originally seen in movie theaters in 1961, the 1986 sequel has the sisters caught up in their own comedy tale of romance and matchmaking. According to Disney spokespeople, Mills receives more fan mail from their subscribers than any other Disney star. Her Disney credits include "Pollyanna," (1960), "In Search of the Castaways," (1962), "Summer Magic," (1963), "The Moonspinners," (1964) and "That Darn Cat," (1965), all of which are frequently requested by Disney Channel viewers. Another encore performance of a Disney classic occurs in March when the original "Treasure Island" will be shown as a lead-in to a new ten hour sequel in mini-series format. "Return To Treasure Island" begins in April with a two hour introductory episode, followed up by eight one hour installments every two weeks from May to August. Yo ho ho. The Disney folks have also decided to return to network television and will be producing a batch of new made-for-tv movies to beef up ABC's Sunday Night schedule against some tough competition. And don't look for this one on The Disney Channel, but sources suggest the company's theatrical film production arm, makers of the adult-comedy hit "Splash," have a movie deal cooking with Madonna. No word yet on the script or possible costars but I think "Mickey and Madonna," the tale of a mouse and the catty woman who trapped him, has definite (irreverant) possibilities.

HOME SHOPPING NETWORK SATCOM IV, TRSP. 1

The Home Shopping Network, 1985's programming success story, will be open for business, live, full-time, at the above address, come March 1st, tempting you with discounts on consumer electronics and gadget items, appliances, jewelry and computers, you name it. You want it? Just dial their toll free 800 number, whip out a Visa or Mastercard and wait for the delivery trucks to roll up to your door.

NBC CABLE NEWS (No home in the sky at press time)

NBC News Division President, Larry Grossman, made it official at the Western Cable Show in December. After negotiations to buy part of Ted Turner's Cable News Network came apart, NBC decided to go "full bore" on the creation of a competing 24 hour a day news service. But Grossman said NBC Cable News would only turn on with a guaranteed 13.5 million cable subscribers in the bag. The deadline for filling that rather large bag was the end of January, so by now, we are watching the birth of a new satellite fed network or wondering what might have been.

Disney Channel presents a revised version of the "father of flubber" in a new "colorized" release of the classic film "The Absent Minded Professor."

THE PLAYBOY CHANNEL SATCOM F4, TRSP. 12

Declaring the network would no longer be identified with "sex on demand," Hugh Hefner has directed the Playboy Channel to come up with new programming to reverse its serious viewership declines. "Out" are mainstream theatrical films. "In" are comedy, variety and news programs. Come now, Hugh...The Playboy Nightly News? Can't wait to see who the anchorperson will be.

SHOWTIME GALAXY 1, TRSP. 5 (E), SATCOM F3, TRSP. 10 (W)

School's out for the cast of "The Paper Chase." The show which got expelled from network TV and received a second chance on Showtime will be filming its last six semester hours and heading toward graduation from production by June. After graduation, the cast of aspiring attorneys and their crusty professor Kingsley (John Houseman) will be forced to repeat all four years—and 58 episodes—of law school, as a weekly series until 1987. Hot on the heels of his box office hit "Saint Elmos's Fire," Joel Schumacher has been tapped by Showtime to be executive producer of "The Slow Burn," a murder mystery set amid the glamorous backdrop of Palm Springs. This Showtime original will be seen sometime in 1986. For five hours in March, Showtime remembers and honors the memory and achievements of John Lennon in "The Lennon Legacy." The tribute will include the prerequisite "rare" and "never-before-seen" footage that always seems to turn up for specials like this. If your tastes are more contemporary, Showtime has lined up the hot rock group Tears for Fears, for an exclusive music special.

WTBS GALAXY 1, TRSP. 18

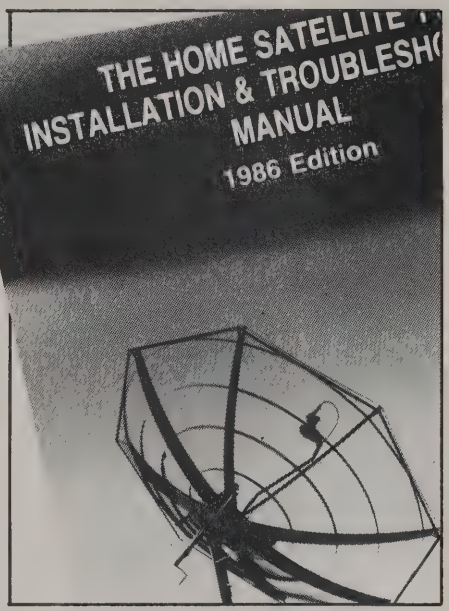
It's not news yet, but Ted Turner is hoping to score a deal with the NFL when its contracts expire, with the Big three networks, in 1987. Until pro-football decides to move south, WTBS sports fans can enjoy Ted's "counter-Olympics," otherwise known as "The Goodwill Games." The games will begin on July the 5th and play themselves out, over approximately 180 or 190 hours, until the 20th. Among the 160 events, in which U.S. and Russia will compete, is yachting, a real proletariat sport to be sure comrade. If you miss the action on WTBS, 120 hours of the games are being earmarked for a syndication package nationwide.

FROM THE BOOKSHELF

THE HOME SATELLITE TV INSTALLATION & TROUBLE- SHOOTING MANUAL 1986 EDITION

Finally an easy to read book that also serves as a do-it-yourselfer's guide to home satellite TV installation and service.

By Terrie Laseter



This book may be the definitive tool for the home satellite system owner, as well as dealer and installer. Both the do-it-yourselfer and the seasoned professional will find this manual the ideal learning text or handy reference. It is well written and an easily read volume which contains all the information needed to comprehend this fast-growing industry from the ground up. Spouses of those involved will find this book just the ticket for clearing up the mysteries of jargon and fascination which may have become part of the marriage contract. The clear, useful charts, graphics and equations that illustrate the text help make everything more palatable.

The authors/publishers, Frank Baylin and Brent Gale, have strong backgrounds in the sales and installations of satellite systems. Baylin wrote and published SATELLITES TODAY—THE COMPLETE GUIDE TO SATELLITE TELEVISION. He is the founder of ConSol Network, Inc., which provides technical marketing consulting services and conducts training seminars.

Brent Gale lists among his 1000+ installations, one at Arthur C. Clarke's home in Sri Lanka.

The Overview includes a good basic education in the science of satellite technology. The reader is walked through a thorough description of communication fundamentals, explanations of the terminology, and history of the industry. Footprint maps show how to decide what size dish is needed depending on your geographic location. This chapter should help the neophyte comprehend the rudiments well enough to get a handle on how and why microwaves work to bring in pictures from space.

Component operation is introduced in the next chapter. The home TVRO system is described in all its various parts. From the outwardly visible dish in its easily recognized shape, to the less often seen "off-set feed" antenna, the varieties are catalogued, complete with a menu telling of the assortment of major classes of dishes: spun aluminum or steel; stamped or drawn steel; fiberglass, and expanded metal or mesh. The reader is then helped to make a choice, taking in the account the variables and requirements of his particular situation. The mounts, actuators, feedhorns, low noise amplifiers, downconverters, coaxial cables, receivers, and miscellaneous units required to operate a complete TVRO system are each given equal time. The following 25 pages on selecting equipment should guide you through the maze of available items. Dealers can use this book to help his customer make the best selection; and the consumer will benefit by gaining a working knowledge which he can use to discuss his system with the dealer.

If every dealer, installer, and consumer will take time to read it there will be far fewer problems in the marketplace overall.

A properly functioning system is entirely dependant on a correct installation. Each step of installation is examined in detail through the next section of this book, beginning with the site survey. Covering the basics from digging the hole for the mount, to running and protecting the cables, How To Install, is necessary reading for anyone involved.

The "Troubleshooting" chapters may be the chapter which will get you to buy this book. You will still need to read the preceeding chapters, because only if you truly understand what is meant by proper procedure will you be able to determine just where your problem may be. No man-made device can be expected to last forever. However, some systems have problems sooner than others. Finding the trouble can be interesting and rewarding if the correct approach is followed. From the basic approach, outlining an initial interview, through the step by step techniques of locating the actual problem, the chapter on Troubleshooting will pay for the book.

THE HOME SATELLITE TV INSTALLATION & TROUBLESHOOTING MANUAL is, in my opinion, required reading for anyone who really cares about the home satellite industry. If every dealer, installer, and consumer will take the time to read it there will be far fewer problems in the marketplace overall. I also recommend the MANUAL to spouses of those involved in the business; it might just save your marriage.

You can order this book and other reference material directly from the publisher. THE HOME SATELLITE TV INSTALLATION & TROUBLESHOOTING MANUAL is $29.95 plus $2.00 per book shipping. Send your name, company, address, telephone number, and check or money order to: Baylin/Gale Productions, Suite D, 1905 Mariposa Street, Boulder, Colorado 80302, (303) 449-4551.

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Satellite TV Guide

A complete list of all satellite networks and where to find them.

AURORA (F5) 143° W

Transponder Number
(TN) Available Programs
20 Learn/Alaska Television Network
Learn while you watch. Every day from 8 a.m. to 11 p.m.
24 Alaska Satellite Television Project
Various network and independent programs. Every day, 7 p.m. to 12 a.m.

SATCOM F1R 139° W

TN Programs
8 NBC—Central
Periodic shows from the Number Two network.
11 Worldwide Television News (WTN)
Daily news from London to Australia.
12 NETCOM International
Periodic sports, news, and network feeds.
18 NASA Select
Part-time coverage of NASA missions.
20 American Forces Radio and Television Service (AFRTS)
Combination of network and independent programming.
22 NETCOM International
(See previous listing.)
24 Radiotelevisione Italiana
Italian network news feeds.

GALAXY 1 (G1) 134° W

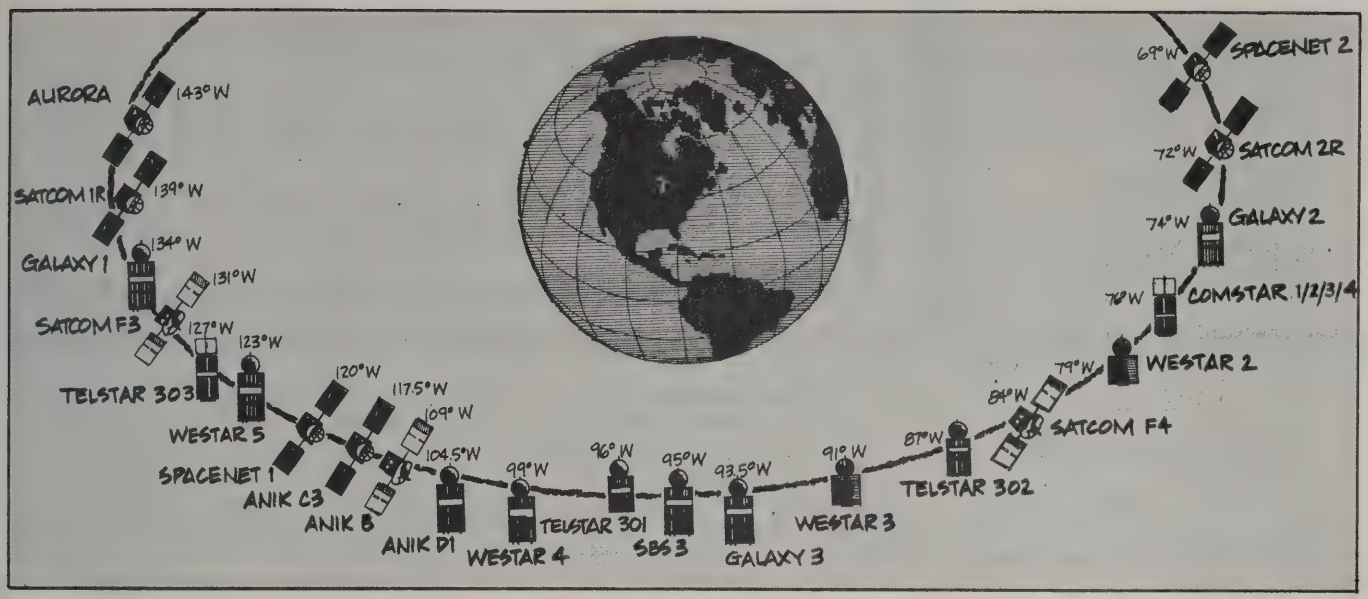
TN Programs
2 The Nashville Network (TNN)
MTV with a country accent. Videos and interviews. Every day from 9 a.m. to 3 a.m. 5.58/5.76 MHz for discrete stereo
3 WGN
One of the first superstations. From Chicago, wide variety of films, sports events.
4 The Disney Channel—East
Fun for the entire family. Every day from 6 a.m. to 1 a.m. 5.8/6.8 MHz for matrix stereo.
5 Showtime—East
Recent films and top sports events.
6 Spanish International Network (SIN)
All-Spanish network with films, sitcoms, specials.
7 Cable News Network (CNN)
Up-to-the-minute news.

8 CNN Headline News
Complete news in a nutshell.
9 ESPN
Truly the wide world or sports.
10 The Movie Channel—East
First run films without interruptions. 5.8/6.8 MHz for matrix stereo.
11 CBN Cable Network
Religious programming for the entire family.
12 Home Team Sports (HTS)
Evening sports events in Washington, D.C. area.
13 C-Span
The President's favorite channel as House and Senate speeches are aired live.
14 The Movie Channel—West
First-run films without interruptions. 5.8/6.8 MHz for matrix stereo.
15 WOR
Superstation based in New York with wide variety of programs.
17 PTL Satellite—The Inspirational Network
Religious programming for the entire family. Discrete 5.58/5.76
18 WTBS
Atlanta superstation with a wide variety of programs. 5.58/5.76 for discrete stereo.
19 Cinemax—East
Recent films and top sports
20 GalaVision
Programs in Spanish. Weekends from 11 a.m. to 4 a.m. and during the week from 4 p.m. to 4 a.m.
22 Discovery Network
Science and Nature documentaries
23 Home Box Office (HBO)
The king of cable stations with films and special events.
24 The Disney Channel—West
Fun for the entire family. Every day from 6 a.m. to 1 a.m. 5.8/6.8 MHz for matrix stereo.

SATCOM F3 (F3) 131° W

TN Programs
1 Nickelodeon (East)
Programs for kids. Every day from 7 a.m. to 8 p.m.
1 Arts & Entertainment
High brow shows (theater, concerts) 5.58/5.76 for discrete.
2 PTL Satellite
The popular "Praise The Lord" show. 5.58/5.76 MHz for discrete stereo.
3 Trinity Broadcasting Network (TBN)
Religious programming.
4 Financial News Network (FNN)
Up-to-the-minute business information. Business days from 6 a.m. to 7 p.m.

6 Satellite Program Network (SPN)
Mixture of films, videos, self-help. 7.38/7.56 for discrete.
7 ESPN Blackout Network
Periodic shows used to fill in for blacked-out regions.
8 CBN Cable Network
(Same as Galaxy 1)
9 USA Cable Network
Sports, sports, sports. 5.58/5.76 for discrete.
10 Showtime—West
Recent films and top sports events.
11 MTV—Music Television
Rock videos, interviews. 5.58/6.62 Matrix stereo.
13 Home Box Office (HBO)—West
The king of cable stations.
15 VH-1 (Video Hits 1)
Rock videos. 7.4 Digital stereo.
16 Home Theatre Network (HTN)
Shows for the family. Every day from 4 p.m. to 4 a.m. 6.8 Multiplex.
16 The Learning Channel (TLC)
Earn college credit from your home. Every day from 6 a.m. to 4 p.m.



17 Lifetime
Become healthier and happier with these varied segments.
18 Eternal Word Television Network (EWTN)
Roman Catholic programs.
18 Reuters Monitor Service
Wall Street quotes at your fingertips. Businessdays from 4 a.m. to 8 p.m.
18 National Jewish Television (NJT)
Jewish segments and news. Sundays only from 1 p.m. to 4 p.m.
19 C-Span
(see Galaxy 1)
20 Black Entertainment Television (BET)
Black films, specials, and sports. 6.2/6.8 for discrete stereo.
21 The Weather Channel
From the National Weather Service
22 MSN: The Information Channel
Each week features new series on finances, health. Monday to Friday from 10 a.m. to 1 p.m.
22 Home Shopping Club (HSC)
Shop-at-home suggestions.
22 HBO Promo Channel
Enticements from the pay channel.
22 USA Blackout Network
Periodic segments used in cities where sports events are unable to be seen.
23 Cinemax—West
Recent films and top sports.
24 Arts & Entertainment
The best of drama and comedy, music and dance. Every day from 8 a.m. to 4 a.m. 5.58/5.76 for discrete stereo.

TELSTAR 303 (T3) 127° W

TN Programs
1 Country Music Television (CMTV)
Rocky road videos and interviews. 5.58/5.76 MHz for discrete stereo.
2 SelecTV
Movies from PG to R.
18 American Extasy
XXX-films. From 11 p.m. to 4 a.m.
22 KTVT
Dallas superstation catering to Sun Belt Interests.

WESTAR 5 (W5) 123° W

TN Programs
2 The University Network
Unusual religious program from Dr. Gene Scott.
5 JISO (Japanese International Satellite Joint Users Organization).
Japanese Network News.
7 CBS—Contract Channel
Periodic taped/live segments.
14 Pro Am Sports System (PASS)
Periodic sports events from Midwest
22 Taft Broadcasting
Periodic sports, news, network feeds.
22 The Meadows Racing Network.
Trotter action. Every day except Monday and Wednesday. From 7 p.m. to 11 p.m.
24 Fantasy Unrestricted Network (FUN)
For adults only. From 12 a.m. to 6 a.m.

SPACENET 1 (S1) 120° W

TN Programs
2 Bonneville Telecommunications
Periodic sports, news, network feeds.
11 Hospital Satellite Network (HSN)
Inspiring films and medical segments.
15 American Christian Television System (ACTS)
Christian programming.
21 Baptist Telecommunications Network (BTN)
Religious programs. From 9 a.m. to 2 a.m.

ANIK C3 (Ku) 117.5° W

TN Programs
8 Knowledge NET
9 Access Alberta
10 Premier Choix/TVEC (West)
12 Superchannel/First Choice
17 Atlantic Satellite Network
19 Premier Choix/TVEC (East)
24 La Sette
26 TV Ontario
32 Superchannel/First Choice (East)
32 Radio Quebec

ANIK D1 (AD1) 104.5° W

TN Programs
2 The Sports Network (TSN)
For sports addicts.
6 Much Music
Just what it says. 5.41/6.17 for discrete stereo.
8 CHCH
Varied segments from Hamilton, Ont. From 6 a.m. to 2 a.m. (Encrypted)*
9 WDIV
NBC feeds from Detroit station. (Encrypted)
10 WXYZ
ABC feeds from Detroit station. (Encrypted)
11 CBC North—Pacific
Canadian Broadcasting Company programming. From 11 a.m. to 3 p.m. (Encrypted)
14 Telemedia Communications Television (TCTV)
TVA Programming in French. From 11 a.m. to 3 a.m. (Encrypted)
15 CBC French—Eastern
CBC programs in French. From 11 a.m. to 3 a.m.
16 CBC Parliamentary Network
C-Span North with periodic glimpses of Canadian House of Commons action in French.
18 CITV
A mix of independent segments from Edmonton station. From 8 a.m. to 6 a.m., Monday through Saturday, 8 a.m. to 5 a.m. on Sunday. (Encrypted)
19 CBC North—Atlantic
Canada's national network. From 8 a.m. to 12 p.m.
20 CBMT—Montreal
CBC affiliate from Montreal in

English. From 8 a.m. to 2 a.m.
21 WTVS
Detroit PBS outpost with national and local segments. (Encrypted)
22 BCTV
British Columbia CTV station. From 9 a.m. to 5 a.m. (Encrypted)
23 WJBK
Detroit affiliate of CBS. (Encrypted)
24 CBC Parliamentary Network
Periodic transmission from Canadian House of Commons in English.

*Editor's Note: Stations use Oak Orion decoder system. See dealer for details.

WESTAR 4 (W4) 99° W

TN Programs
6 Word of Faith Satellite Network
Periodic religious segments.
10 Word of Faith Satellite Network
Same as above.
11 Catholic Telecommunications Network of America (CTNA)
Catholic segments. From 1 p.m. to 4 p.m. (Encrypted—Oak Orion)
15 PBS
Eastern public television. Monday to Friday from 10 a.m. to 2 a.m., Saturday from 8 a.m. to 12 a.m., and Sunday from 9 a.m. to 2 a.m.
16 Cable News Network (CNN)
Periodic local segments.
17 PBS
Central U.S. Segments. From 8 a.m. to 1 a.m., Monday through Friday, Saturday from 12 p.m. to 4 a.m., and Sunday from 9 a.m. to 11 p.m.
19 Bonneville Telecommunications
Periodic sports, news, network feeds.
19 DEMSAT
The word, according to the Democratic Party.
21 PBS
Mountain U.S. segments. From 7 a.m. to 4 a.m. Monday through Friday, Saturday from 1 p.m. to 4 p.m. and Sunday from 8 a.m. to 2 a.m.
23 PBS
Pacific U.S. segments. From 11 a.m. to 12 p.m. every day except Sunday, 10 p.m. to 11 p.m.

TELSTAR 301 (T1) 96° W

TN Programs
2 CBS-TV (Central)
Scheduled network programming.
3 ABC-TV
Regional news feeds.
4 ABC-TV Contract Channel
Programming and news feeds.
6 ABC-TV
Periodic taped and live network feeds.
7 CBS-TV (Central)
Regularly scheduled network shows.
9 World Communications
Periodic sports, news, and network feeds.
10 ABC-TV (Central)
Regularly scheduled network shows.
12 ABC-TV (Central)
(Same as previously mentioned.)
13 Hughes Televison Network
Sports events from around the country.
13 Major League Baseball Network
Big League Highlights shown daily.
13 Independent Network News
Half-hour news wrapup.
23 Wold Communications
(Same as previous listing.)

SBS 3 (Ku) 95° W

TN Programs
2 Videostar Connections
Independent news and network feeds as well as some teleconferences.
3 NBC-TV (Pacific)
Scheduled network shows.
5 NBC-TV
California to N.Y. feeds
6 NBC-TV (Central)
Scheduled network shows.
7 Conus/Hubcom
Newsfeed access channel.
8 PSN (Private Satellite Network)
(Encrypted—Oak Orion system.)
9 NBC-TV
NBC news feeds and some regularly scheduled programs.
10 U.S. Army School Of The Air

GALAXY 3 93.5° W

TN Programs

Periodic transmissions (sports, news, network feeds) on transponders 2, 4, 6, 7, 8, 9, 10, 11.

WESTAR 3 (W3) 91° W

TN Programs
5 Cable News Network (CNN)
Periodic local programs.
21 Brightstar International
International newsfeeds.

TELSTAR 302 86° W

TN Programs
10 ABC-TV (Pacific)
Scheduled network shows.
11 ABC-TV
Periodic sports and news feeds.
16 CBS-TV
California to N.Y. shows and news feeds.
19 CBS-TV
Periodic sports and news feeds. They are also scrambled part-time as a test.
20 CBS-TV (Central)
Scheduled network shows.
21 NETCOM International
Periodic sports, news, and network feeds.

SATCOM F4 (F4) 83° W

TN Programs
1 HBO
Remote feed channel.
2 Bravo
High-brow entertainment with movies, concerts. From 8 p.m. to 6 a.m., Monday through Friday, from 5 p.m. to 6 a.m. on Saturday and Sunday. 5.8/6.8 MHz for multiplex stereo.
2 The Book Channel
Book reviews and author profiles.
4 Nickelodeon—West
Programs for kids. Every day from 7 a.m. to 8 p.m.
5 ABC
Periodic network programming.
6 Hughes Television Network
Sports events.
6 BizNet, The American Business Network
News and interviews. From 7 a.m. to 2 p.m., Monday through Friday.
7 National Christian Network
Religious fare. Every day from 8 p.m. to 3 p.m.
8 Netcom International
Periodic sports, news, network feeds.
9 SportsVision
Periodic sports events from Chicago.
10 American Movie Classics (AMC)
Just what it says. From 8 p.m. to 6 a.m.
11 Home Sports Entertainment (HSE)
Sports events from Sun Belt. Every day from 6 p.m. to 1 a.m.
12 The Playboy Channel
Hefner's lifestyle comes to life via contests, movies and music. From 8 p.m. to 6 a.m.
13 New England Sports Network (NESN)
Periodic sports events.
14 Home Sports Entertainment (HSE)
Affiliate programs show periodically.
14 Netcom International
(See previous listing.)
15 Healthcare Information Network (HIN)
Medical information programming.
16 The Silent Network
Shows using sign language. Saturdays from 10 a.m. to 12 p.m.
19 WPIX
New York superstation with a variety of shows.
20 Boresight
News about the TVRO industry.
21 The Nostalgia Channel
Bringing back the good old days of entertainment. From 5 a.m. to 2 p.m. and 5 p.m. to 8:45 p.m.
22 ABC Remote Feeds
Periodic transmissions.
23 Odyssey
Yuppie programs with music, exercise. 5.8/5.76 MHz for discrete stereo.

SATCOM F2R (F2) 72° W

TN Programs
13 NASA Contract Channel
Catch all of the space action—live!
20 Armed Forces Radio and Television (AFRTS)
See previous listing.

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Earth Station Owner of the Month

COUNTRY MUSIC STAR

RONNIE MILSAP

When he's not recording this blind singer loves to "watch" satellite TV.

Photo Courtesy Ronnie Milsap Enterprises

By Alanna Nash

On the days when country music singer Ronnie Milsap comes home after 18 or 20 hours in the recording studio, nothing relaxes him, he says, like fooling with one of his three electronics hobbies—collecting video tapes and old radio shows, gabbing with fellow ham radio operators around the world, and watching sports and movies on his satellite TV system.

Milsap has been blind since birth, but "watching" is still the correct term, says the 1977 Country Music Association Entertainer of the Year.

"I usually tell people I see with my ears," Milsap explains at his office in Nashville, a big smile rising beneath his dark glasses. "The theater of the mind is amazing. Sometimes I have to have somebody describe what's going on at a critical time in a movie, if that part is mainly visual, but I enjoy television, and I enjoy a lot of video things. I record a lot of stuff, or people send me things that I've done on shows, and it's very helpful. I've kind of gotten behind in my cataloguing system—I label most of my stuff in braille—but I love it. It's a fun hobby."

As a total "techno-buff," Milsap bought his satellite system several years ago "because it's more versatile than cable," and because, according to Tom Corley, Milsaps publicist, "if the public has access to it, he wants to have it. There's a big screen TV in the den, but he's got 16 televisions throughout his house—all hooked up to the dish—and 16 video machines. He also likes to use the dish to pick up some of the radio networks that broadcast by satellite."

The fact that Milsap can afford to indulge his electronics hobbies to such an extent is testament to how far the 40-year old musician has come since arriving in Nashville in 1973, $25,000 in debt. With his first number-one record, "Pure Love," in 1974, Milsap went on to add 28 more hits by the end of 1985—more than any other country music group or artist in the same time period. Aside from the Entertainer of the Year award, Milsap has won the CMA's Best Album and Best Male Vocalist awards three times each, as well as three Grammy awards. All of that has helped to make him a wealthy man. He owns, among other things, a $1.5 million, 48-track recording studio on Nashville' Music Row, where he makes his own records, including last year's bit hit, "Lost in the '50s Tonight."

"When I first came to Nashville, things started moving pretty quickly, and I was really overwhelmed by all the awards, and bein' on television and radio, and having material things," he remembers. "I guess when you grow up with very little, as I did, material things stick out to you, and before you have any of those things, that's what your idea of success is. But then when you've been able to excel a little bit at something, your whole idea of success changes. Today, if I'm able to be myself and do what I love to do—and if I'm able to communicate with people—then what I have materially isn't so important. It's important what's inside of me, and what I feel from other people."

Born in Robbinsville, N.C., in the foothills of the Smoky Mountains, Milsap was reared by his grandmother and step-grandfather—his father also lived in the house—after his mother deserted him when he was only a few months old. Most of his memories of childhood center

(Continued on page 80)

NOW! PUT THE WORLD IN YOUR BACKYARD!

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Anyone can now put in their own backyard or roof-top dish - and save thousands of dollars in doing it. And its completely legal. **The Satellite TV Handbook** *tells you how.* Enjoy the galaxy of satellite TV networks - *without* having to get cable TV. Cash in on the *booming* satellite TV business; buy your own home satellite TV system at wholesale prices. Mr. Easton tells you how!

Everything you Ever Wanted to Know. In One Great Book!
The Satellite TV Handbook is loaded with how-to tips: Where the secret signals are hidden - and how to find them. How to legally build a 'mini-cable' system to share with your neighborhood. All about the hot new K-band satellites. how to build your own home satellite TV dish for *under $500* (with receiver!)

Tune into Global Television - From Around the World!
Where to find the satellites, and what's up there, satellite-by-satellite. How to tune into Moscow TV - via satellite. All about the international satellites; Canadian, Mexican, South American, European networks you can watch!

Easy-to-Read Style Covers A-to-Z of Satellite TV!
Written in a friendly, easy-to-read style, Mr. Easton tells all in non-technical down-to-earth terms. From the beginning days of cable TV to the latest "super satellites" and 2-foot dishes. This book is a must for anyone interested in home satellite TV: homeowner, cable TV viewer, satellite entrepreneur! Here is the one complete guide to buying, building and operating for fun or profit your own satellite TV earth station.

With Hundreds of Illustrations - And a FREE computer program!
The **Satellite TV Handbook** is chocked full of pictures, charts and diagrams, and includes a *free* computer program that you can run on your personal computer to *automatically* locate the birds in space. Over 400 pages long with 7 technical appendices, the **Satellite TV Handbook** is the ultimate introduction *and* reference guide to the fastest-growing home entertainment product of the eighties! Take a look at the Table of Contents to see what's included.

TABLE OF CONTENTS

Chapter 1 - The Satellite and Arthur C. Clarke: How it All Began
Chapter 2 - Cable Television Wires America
Chapter 3 - Cable TV Goes into Space: What's on the Birds
Chapter 4 - The Home TVRO System: Watching TV Beamed from Space
Chapter 5 - SMATV and the "Private Cable" System: How to Cash in
Chapter 6 - Putting Satellite Television to Work in the Business and Nonprofit Organization
Chapter 7 - Video Teleconferencing Via Satellite TV: How to Enter this Lucrative Business
Chapter 8 - How to Build Your Own Personal Earth Station
Chapter 9 - Construct a Backyard TVRO Antenna for under $200
Chapter 10 - The TVRO Satellite Receiver You Can Build for $300
Chapter 11 - Finding the Hidden Satellite Signals: Audio Networks, Teletext and News Wire
Chapter 12 - DXing the International Satellites
Chapter 13 - Those Other TV Channels: STV, LPTV and MDS
Chapter 14 - DBS and You: Direct Broadcast Satellites and the Future of Satellite Television
Appendix A - Glossary (Everything You Ever Wanted to Know...)
Appendix B - The Satellite TV Networks: A Satellite-by-Satellite Listing of What's on the Birds
Appendix C - Manufacturers, National Distributors & Dealers
Appendix D - Diameter vs. Location: How to Calculate What Size Dish to Use
Appendix E - Locating the Birds in Space: How to Aim Your Dish
Appendix F - The Rules & Regulations for **Legally** Watching Satellite TV
Appendix G - Reference for Further Study: Magazines, Contacts

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TECH TALK

(Continued from page 10)

neither salesman or his installation crew had the technical knowledge to install the system properly. The salesman did a fine job of selling the customer on the wonderful benefits of owning his own satellite system yet the crew he subcontracted the installation to botched the job, and the salesman, who may have been technically ignorant, did not realize there was a problem with the installation until it was almost too late. The installer kept blaming the equipment and the consumers inability to correctly operate the system when almost all of the problems were a result of installation error. With the customer refusing to make his scheduled payments to the bank that financed the system I was called in as a consultant/troubleshooter to patch things up. Upon visiting the system over a dozen problems were noted and corrected, all minor but each contributing to the total problem.

The lesson to be learned from all of this is that when investing in a satellite system, or any major appliance that requires installation, it pays to know who and what you are dealing with. Get referrals from the dealer of past systems he has installed, call around and follow through on checking things out. Find out if they have had any problems, and if so how efficiently was the service handled. Read all you can find about the equipment you are considering, and ask questions about anything you do not understand. Magazines such as this are an excellent source of basic information and product knowledge. •

LETTERS

(Continued from page 8)

be able to stop scrambling of advertisement dependent networks.

First, write CBS a letter stating how their decision to scramble has affected satellite system owners. Also mention that letters of complaint will be sent to all advertisers who currently sponsor programming on CBS and that efforts will be made to change CBS ratings, by not watching CBS programming offered by local CBS affiliates (if local affiliate exists).

Second, write a letter to all who advertise on CBS. Inform the advertiser that their commercials on CBS have been scrambled, thereby eliminating satellite system owners from the CBS viewing audience. Also state that until advertising is cancelled with CBS or CBS discontinues scrambling, no products made by this company will be purchased.

Finally, the CBS ratings must be changed by watching other network programming and recording this in the A.C. Neilsen or Arbitron rating booklet, which is mailed out to random television viewers weekly. By changing ratings on CBS programs, the amouint of money an advertiser pays for a particular program is reduced, thus reducing CBS's income.

With the help of all satellite system owners, maybe we can produce a reduction in CBS's revenue and force CBS to unscramble it's programming. If we are unable to change CBS, then many other commercial dependent broadcasters will scramble their programming, leaving us with very little free programming to view from the satellites.

Larry Hines
Ft. Worth, Texas

While we cannot endorse what you propose we certainly can agree with the thought behind it. Many millions of Americans living in signal starved areas are again being ignored by the major networks whose only goal is making millions for themselves and the so called affiliate stations which also earn millions of dollars annually utilizing the "public" airwaves.

Ku Band

This letter contains a few questions that my friends and I found confusing. The questions deal with encryption and Ku-Band signals.

1. First of all, how well can a mesh dish pick up a Ku-Band signal.
2. Secondly, will the Ku-Band ever become as popular as the C-Band.Also send me listing of the Ku transponders with brief information on the most popular ones.
3. This question deals with scrambling. As I was looking through the Satellite TV Guide, I saw that most of the scrambled transponders could be decoded by the Oak Orion Decoder. Could you send me information on this decoder, like price and transponders that it decodes, also if there is a monthly charge.

We are sorry that it will take up plenty of time to answer these questions, but these are questions that quite a few people in my town wanted answered, so I wrote this letter.

I enjoy Your Questions Answered very much and it answers many of my questions. Your doing a great job.

Jayson Fehr
Manitou, Manitoba, Canada

Yes some mesh dishes will work fine for Ku-band, but it should be a very fine mesh or a closely perforated large diameter (8' or better diameter) dish. We personally believe Ku-band has a great future as a home delivery system and more programming will be available on that band much like there is on conventional TV sets equipped with UHF and VHF tners. We know of only one company that currently sells the Oak Orion decoder for the Canadian Anik programming and that is right in your native land—Cancom out of Toronto, Ontario should be able to help you with that one. The monthly charge for the programming on Anik depends on the number of programs you wish to receive (they call it "multiple tier") and is about $29.95 for a complete package plus price of the decoder which has fluctuated quite a bit lately. •

"He's mad at me. I called his $9,000 home video component system a 'TV set'."

Q&A

(Continued from page 10)

DESCRAMBLE?

Q *I recently saw an ad for a descrambler and have sent the ad to you to find out if it really will work.*

A Advertisments for descramblers have been around about as long as the home satellite industry has existed and one thing we have found is that none of them work. There have been many people who have spent money on these devices only to discover they have been parted with their hard earned dollars and remain as much in the dark on scrambled channels as the rest of us. The second, and perhaps more important point, is that it is definitely illegal to own and operate a descrambling device for the purpose of viewing scrambled pay TV. Anybody who sees an ad for such a device (whether it be a kit or assembled) and sends off their dollars for it is asking to be taken. You may receive some type of device for your dollars but odds are they will not work. As the basic services turn to scrambling you are sure to see a proliferation of these ads offering such devices and we plan to test them out to warn you about them. •

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LOOK BEFORE

(Continued from page 16)

The relative youth of the satellite industry makes its newer rental aspect more risky, of course. Some companies, because of the risk involved in possible damage to their equipment, charge deposit fees. Others insist on such long term agreements (as high as 60 months) that it makes renting a unit less attractive than an outright purchase.

Taking the pros and cons taken into consideration, the last question you have to ask yourself is, when is a rental option right for me? Many industry experts see new home owners as a big chunk of prospective renters. A lot of couples want to rent the more expensive satellite systems before putting down another $2,000.00 to $3,000.00 to make it a permanent part of their new home. Other reasons for the surge in rental is business tax write-offs.

A spokesperson for Capitol Cable,

Part of the reason for an increase in the rental market is the large volume of satellite equipment being traded in by consumers.

A New York retailer, says that many of the people that lease systems from them now use satellite TV in their daily business routine. "You can now get all kinds of video and audio text from satellites that are very useful to some businesses. They have financial information that you can access by hooking up a decoder. People are leasing them to get market reports and things like that. By renting them they can deduct benefits from their taxes, and at the same time, put them in their backyards so they can work out of their homes."

Capitol's program offers their topline system for lease at $175.00 a month which includes everything. After three years, you can own the system for a payment of just one dollar. By deducting it as a business expense, many people regard this type of investment as a much more sensible approach than an outright purchase.

Says one consumer, who has now rented his own system for over a year, "The ultimate would be to own your own dish, but there are ways to lease now, where you can get a quality system and still pay about the same in the long run. It's like anything else, the important thing is to shop around before you commit yourself to a lease." •

BUYING SMART

(Continued from page 15)

another one of those items best purchased new unless it's a real bargain. The choices in brands are limited. There are some very inexpensive polarizers offered now, but to my experience they have been moderately successful, so it's best to buy the cheap ones new, not used.

If it is an omni-type rotor, or magnetic rotor, put it on line and make sure it switches properly.

Actuators and actuator controllers may be the most difficult part of the system to evaluate. They should be put into action and observed. Does the controller function as it should? For example, if it is a programmable, does it hold memory and run the actuator jack back to the same place every time? Does it blow fuses, is the count right, are all the buttons and switches still intact? Does the LED readout function?

Make sure all the mounting hardware is included with the package. There is nothing more frustrating than to begin mounting the drive and find that some essential pieces are missing. Verify that all the connectors are included. Some controllers take connectors that are not commonly found at your local Radio Shack or K-Mart.

Make sure the jack is of the length you need and is strong enough for your application. Is the company still in business and can you get parts for it?

Cable is another portion of the system that I would hesitate to substitute used for new. It depends on the length of the run and whether or not it's going to be buried. There are few things worse than finding out your problem is in the cable, and then having to dig it out, or pull it out of conduit, and replace it with new cable. Examine it for breaks or spots where it may have melted. Make sure you look at it as you unroll it and inspect the cable for breaks.

TVRO systems have been around long enough now that there has been a used market created. Bargains are out there to be had, and sometimes it's worth buying them, but be sure how to evaluate the used product. Examine the component while in operation. Physically go over it. Ask questions. Make sure the warranty and instruction manuals are with the receiver or actuator. If the original instructions are not with the unit try to obtain a copy. If it is an expensive piece of equipment and an extended warranty is available, do so, with care. Good luck and good hunting. •

AUDIO BONUS

(Continued from page 35)

background noise, found on slightly less expensive satellite gear. Unlike Dolby, it requires no encoding and is designed to remove background noise from virtually any program source. Like Dolby, that involves filtering out some of the high-energy hiss which accompanies the satcast signal—and like material which has not been Dolby-encoded, that usually means removing some of the upper midrange frequencies, stripping the music of its sheen and brilliance.

WFMT is a satellite programmer which takes great pride in the fidelity and dynamic range of its signal. Yet as heard on many satellite receivers, the sound is terrible. The reason is the noise companding process used by WFMT to deliver its signal. Developed by Wegener Communications, the process is something like Dolby B but in no way compatible with it. Short of shelling out $1400 for a Wegener 1401

Better receivers have wideband/narrowband audio switches which enable you to choose a stronger signal, but at the expense of the full frequency response.

decoder, the best hope of hearing WFMT as it was intended is to find a dbx 124 compander and wire it into your system. The results certainly aren't perfect, but they are better than you're likely to obtain any other way.

Virtually all of the stereo signals on satellite are discrete, using one subcarrier for each channel. There's one exception, FM station CIRK on Anik D (18). It uses a process called multiplexing to get both channels on a single subcarrier. Multiplexing is what your local FM stereo station does to get it all on one FM frequency. It's done by electronically adding left and right channels and broadcasting the sum. Meanwhile, on a supersonic subcarrier, the difference between left and right channels is blended with the audible portion of the program. An integrated circuit inside the FM receiver does the necessary addition and subtraction to recreate the original left and right channels. Since no satellite receiver or signal processor has the necessary electronics for this procedure, it may be necessary to find an outboard multiplex decoder or to pass the signal through a good FM tuner for decoding. •

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SPORTS

(Continued from page 48)

Our chart shows you where sporting events commonly are found. Other than horse racing (which generally is found on the same satellite and transponder whenever it is scheduled) the uplink and satellite transponder that will be used are sometimes not decided upon until a relatively short period of time before the event will be aired. This does not allow the program guide folks enough time to include them in their schedules so it is almost entirely up to you to determine where the event might be transmitted (satellite) and does require a bit of searching on your part. This is where a good horizon-to-horizon or linear actuator motor drive comes in very handy.

After several years of monitoring sports broadcast on satellite, and three worn out actuators, I have found a pattern to where sporting events can be found depending on their geographical location.

For example if the game is taking place on the east coast then the event usually will be transmitted on one of the eastern satellites such as Westar 4, Telstar 301 and 302, or Galaxy 2. However some west coast games such as NFL football also will be found on these same satellites, but again after a while you will notice a pattern developing and after a few days or weeks will be able to pretty well determine where a specific game might be broadcast.

A major boxing match, if it is unscrambled, generally can be found on Westar 4, and the only reasoning I can find behind this is because it is a strong satellite, is centrally located and more than likely the fight is being transmitted to Puerto Rico and Central America,in which case Westar 4 is probably the best satellite for that purpose.

Westar 5 also seems to be an active satellite for sports and lately Galaxy 2 has been carrying a lot of automobile racing. Satcom 1, which is normally pretty vacant, other than the NBC feed on transponder 8, has also picked up in sports activity although that satellite should be low on your priority when searching for sports programming. High on your list should be the Westar, and Telstar satellites for Fall sports and the Anik and Westar satellites for Winter and Spring sports. In many cases you may find two or more feeds—one with commercials and a raw feed without commercials. Actually I find a sporting event quite dull without the commercials so I usually watch the full feed which should make the big boys at the networks happy. •

Anytime two opposing teams are more than a few hundred miles apart, and they are playing a game together, the game will be transmitted via satellite.

Sports Finder Chart

This Sports Finder Chart will help take the guess work out of where to find the dozen of special sports feeds on the satellites. Many networks, besides the top three (CBS, NBC, ABC) broadcast dozens of professional and collegiate sporting events every day of the week this chart will help you to narrow down your search for these feeds whether it be hockey, tennis, golf, bowling, baseball, football and sometimes even overseas soccer and cricket matches. Most sports programmers seem to utilize the same transponders and satellites for their feeds and once you familiarize yourself with this chart you will almost instinctively know where to find a particular sporting event from a particular region or city of the US.

	F1 SATCOM F1R 139° W	W5 WESTAR 5 122° W	W4 WESTAR 4 99° W	T1 TELSTAR 301 96° W	G3 GALAXY 3 93.5° W	T3 TELSTAR 302 87° W	G2 GALAXY 2 74° W
TRANS 1	SPORTS	HORSE RACING (e)					
2				CBS	SPORTS		
3							
4				ABC	SPORTS		
5	SPORTS			SPORTS	SPORTS		
6			SPORTS, HORSE RACING (e)	SPORTS	SPORTS		
7					SPORTS		
8		SPORTS			SPORTS		
9	SPORTS				SPORTS		
10			SPORTS	ABC	SPORTS		
11			SPORTS	SPORTS	SPORTS	SPORTS	
12	SPORTS				SPORTS		
13				SPORTS (ABC)			
14		SPORTS					
15	SPORTS	SPORTS, HORSE RACING (e)					SPORTS
16		SPORTS		SPORTS (CBS)			SPORTS
17				SPORTS			SPORTS
18	SPORTS	SPORTS		SPORTS			SPORTS
19			SPORTS	SPORTS		SPORTS	
20		SPORTS, HORSE RACING (e)	SPORTS	SPORTS			
21		SPORTS				SPORTS	
22	SPORTS	SPORTS, HORSE RACING (e)					
23			SPORTS	SPORTS		SPORTS	
24		SPORTS		SPORTS		SPORTS	

(e) = Fully encrypted/scrambled.

Compiled by Jim Bookout

SHRINKING SYSTEMS

(Continued from page 23)

frequencies and still other groups are manufacturing retrofit kits which are likely to meet most needs.

What about scrambling?

Well there is good news and bad news. The bad news is that yes there will be scrambling but like C-band most of the scrambling will take years. The good news is that as the cost of Ku systems come down to a couple of hundred dollars the market will expand and fees for receiving scrambled services will be reasonable as well. Most consumers will enjoy the free services and pay for scrambled services when the fees are appropriately reduced.

When will that time come? It's not far off if you consider the vast market the Ku creates and the projection that by the year 2000 satellite farms can offer between 22,000 and 45,000 channels for all forms of microwave communications. This projection suggests more than a few mushrooms on rooftops across America. •

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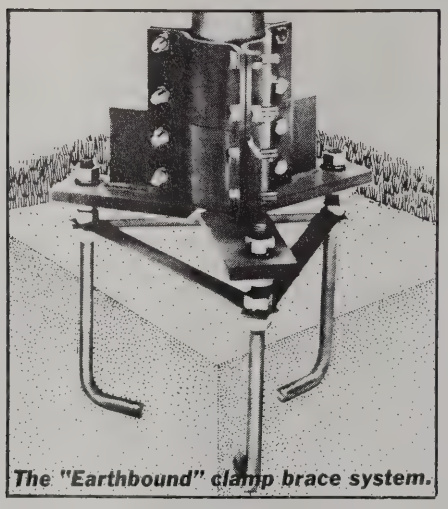
CAGEY MOUNTS

(Continued from page 28)

degrees askew but the bolts on the cage allow for quick adjustment. Installation of the cage requires that you protect the threads on the cage while the foundation is being poured. A layer of electrical tape over the threads is sufficient and is easy to remove once the cement has set.

Should you wish to move the antenna at a later date the pole is re-useable by loosening the nuts and moving it to the new site for installation on another cage.

Earthbund Inc., a manufacturer of specialized satellite antenna mounts has introduced the Concrete Anchored Clampbrace Pedestal Mounts (Pat. Pend.). Billed as *customer installable* the Clampbrace clamps securely to a shortened



The "Earthbound" clamp brace system.

antenna pole. (This serves the same purpose as the plate welded to the base of the pole.) The Clampbrace then bolts to a cage assembly at three points. This cage, unlike the long slender cage previously described, is composed of a steel triangle with three J bolts extending below the points of the triangle. A mounting template and all necessary hardware is provided.

TDP Electronics, the OEM manufacturer of Radio Shack's satellite system has adapted the subterranean cage mounting method to their system. With J bolts similar to Earthbound's Clampbrace, the Radio Shack pole is fitted with a steel plate for foundation attachment and even includes a bubble level at the opposite end of the pole to simplify the task of leveling.

If you live in an area where the ground is prone to shifting the slight additional expense of a cage is a good investment and only a small percentage of the overall expense involved in your system. •

Ku Expands Viewing Horizons

By Peter C. Sutro

In the early days of TVRO, as long ago as 1979, one could spend as much as $15,000 to receive the few satellite programs that were available on Satcom 1, which was virtually the only satellite which was transmitting any video programs. Those consisted mainly of HBO, ESPN and some religious programs. As the years passed, the satellites became more numerous, the home equipment became more reliable, and less expensive, and the programming proliferated. By 1984 the TVRO industry could boast excellent equipment which could be automatically positioned to receive any of 13 active satellites which transmit about 100 programs such as HBO, Showtime, The Movie Channel, CNN, ESPN, Cinemax, Playboy, the three major networks—NBC, CBS and ABC—as well as Public Broadcasting and many regional sports feeds. All of this excellent equipment could be installed in 1984 for less than $5,000!

During this entire period a lot of attention was focussed on something called DBS—Direct Broadcast Satellite—which was what the planned service at Ku-Band or 12 GHz was referred to. The DBS people were promising that by 1986 we would be receiving a wealth of entertainment on three-foot dishes using equipment which could be installed for under $1,000!

Some prestigious and well-financed companies announced their entry in the DBS Ku-Band sweepstakes—Comsat; a joint venture of ALCOA and the giant Japanese electronics firm NEC with newspaper baron Rupert Murdoch as the operating entity. Both would pull out abruptly when USCI, a company heavily financed by Prudential Insurance Company and General Instrument Corp. went bankrupt.

Things looked very bleak for the future of Ku-Band DBS.

During this 1984-1985 period the possibility of using C-Band Satellites and small receiving antennas became more feasible. The new Galaxy I Satellite made good to excellent reception possible in most of the U.S. using six foot dishes and at the fringes of the footprint using 7 to 8 footers.

However, just as it seemed that C-Band DBS was about to develop, many of the programmers on Galaxy I announced their intention of scrambling their signal in order t to sell them to the backyard dish owners. This was fine except for the fact that the decoders which HBO and others were proposing to sell would cost almost as much as the entire antenna systems; and the monthly fee which HBO and others wanted to charge would probably price it out of the mass market.

So, the future of the TVRO and DBS industries as we enter 1986? Strangely, Ku-Band seems about to experience a rebirth and C-Band DBS also seems to be viable. Three of the most important cable programmers—Showtime, ESPN and CNN—are now uplinked to a Ku-Band satellite by Holiday Inns for use in their motels. What is to prevent these services from being offered to private homes and apartment houses, perhaps with the addition of more services as required? In the first quarter of 1986 the two new RCA Ku-Band satellites will be operational delivering 36 channels of 45 watt of power each, more than adequate for reception on two and three foot dishes. It seems that there will be an abundance of transponders available on Ku-Band to go along with the 100 or so programs now available on C-Band, so what should the prudent TVRO buyer of 1986 purchase?

Luckily, there exists product on the market today which can create an economical *dual* C and Ku-Band compatible system using one dish, one feed, two LNB's and one receiver. In order to create such a system the following elements are needed:

1. The antenna would ideally have a solid 6 foot center to optimize the Ku-Band signals from the offset feed and 12 to 24 inch perforated extender panels to create an 8 to 10 foot dish for optimal C-Band reception.

2. A dual feed capable of polarotation for both the C and Ku-Band feeds.

3. Separate C and Ku-Band LNB's.

4. An horizon-to-horizon mount accurate enough to stop the dish at very precise locations in the geo-synchronous arc which is especially important for best Ku-Band reception.

5. A block downconversion receiver compatible to C and Ku-Band. •

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Product Reviews

Shopping for a new system or planning to upgrade or add onto your existing system, take a look at these three new products reviewed by our technical staff.

LUXOR 9995

Luxor has introduced a mid priced block receiver (9995 receiver) that drew rave reviews at a recent home satellite TV trade show along with its higher priced brother the 9900.

Actually the two should be called husband and wife because the original intent of the 9995 was as a "slave" unit (you decide whether the 9995 is the husband or wife), but the unit functions very well as a stand alone receiver.

The 9995 breaks away from Luxor's traditional look (black box) and wanders into the area of high fashion design. The 9995, which is a continuation of the 9000 series that began way back with the 9530—the first full functioned remote controlled stereo receiver for home satellite TV—and continued with the 9540 and 9550 and now the 9900 and 9995. The only break in that chain was the Mark 2 which closely resembled the 9950 but in a little bigger black box with a signal strength meter.

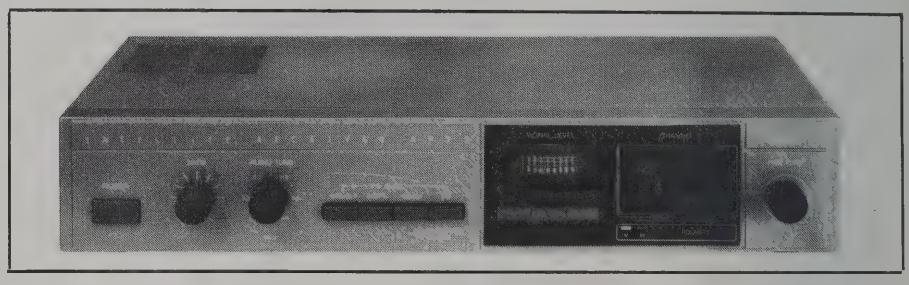
With only two cables to worry about the 9995 is a snap for the average consumer to hook up, and the quick connect polarizer cable terminal board makes that job even easier. The other cable is usually an RG 6 coax with "F" connector.

The LNB supplied with the receiver is a bit on the heavy side although it does put everything into a nice neat weather proof package. The LNB's optimum K rating falls between 75 and 80° and is a good performer even on small diameter dishes.

We originally tested the receiver on a six foot Winegard perforated dish just to see how well it would perform in a fringe area, and both the receiver and LNB performed very well on Galaxy with some sparklies on some transponders, but for the most part it produced super video. Then we tried out the transponders on Satcom 3, and while there were heavy sparklies on transponder 8 most of the transponders came in as well as the Galaxy channels. The 9995 outperformed a comparably priced block receiver on the same antenna.

Then we hooked up the receiver (and LNB of course) to a 10 foot fiberglass dish, and as expected the performance was even better. The area where the test was conducted (Southeast US near the Atlantic Ocean) is considered on the fringe area of most satellite footprints so naturally we were very surprised at the performance on a small diameter dish, and not so surprised at the performance from the larger diameter dish. In fact we expected the receiver to perform as well as it did from previous exposure to the unit.

The 9995 is C and Ku band compatible, however Luxor has not begun mass production on the necessary LNB for Ku reception for the US. At press time we were told there were only 18 Ku band LNB's of Luxor manufacture in the continental US, but that may have changed by now.



Luxor has packed just about every feature into the 9995 and still managed to keep the retail price in the under $400 range which makes it a nice unit for those looking for a medium priced system.

While the controls are simple push button or knob they are very well placed on the unit and in what seems to be a logical order. The receiver is very consumer friendly and easy to operate.

The 9995 can be used with either a single or dual LNB system and has the appropriate female "F" connectors on the rear panel for the vertical and horizontal LNB, or it can be used with a single LNB and the odd/even switch on the front panel. There is even a provision for installation of a TI filter (Luxor manufactures the filter) which two "F" connection in the rear that have to be bridged if the filter is not in place. Luxor provides the very short jumper cable for that purpose with adequate notice that the unit will not operate unless it is connected to both female plugs.

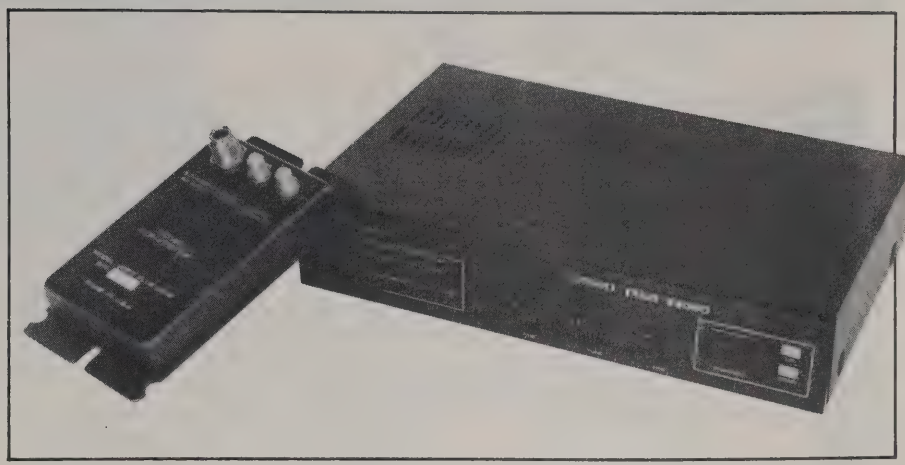
Tuning is accomplished by the detent tuning knob and channel number is indicated by a backlit readout that is rather on the small side.

The 9995 features skew control, audio tuning (5.0 to 8 MHz), preset tuning, and a handy audio bandwidth switch for wide and narrow audio bandwidths to pull out a wider range of subcarriers.

Other features include fine tuning, automatic frequency control and polarity LED indicators, plus a signal level meter which really does not vary much and is not a very good indicator for relative signal strength. Luxor does provide an adjustment for the meter along with a Polarotor adjustment pot under the receiver, however to make these adjustments requires a non-conducting alignment tool that can be found in electronics retail and wholesale outlets. I would have preferred a set of knobs on the rear of the receiver for these functions because I found it to be quite a balancing act to use these controls with the skinny alignment tool (made out of plastic) required for the job. The 9995 did need some adjustment but I would suspect this would be done by a technician when the unit was installed. I do not recommend that a novice attempt this task because it is a bit tricky and a bit of overexertion could damage the adjustment pots.

The Luxor 9995 produced excellent video although we did notice a bit of noise, however the video was very acceptable. As a stand alone or a slave receiver the Luxor 9995 is a good performer.

VIDEO PLUS



We first spotted the Video Plus 240 SD receiver in the waning minutes of a trade show perched on the back end of a Van.

Several dozen feet away the video quality was striking and closer inspection revealed it to be superb. What really came as a big surprise was the receiver was hooked up to a six foot perforated dish and we were watching a Satcom 3 transponder. In fact I asked Carl Killian, who was demonstrating the unit, to move the dish just to prove that the receiver wasn't hooked up to a larger antenna—it wasn't.

At that time Kilian said the receiver was a demonstration model and they would not be going into full production until later in the year. The Video Plus receiver is now in production at Electro-PAC, Inc., of Chicago, Illinois, and I received one of the first models off the production line.

After seeing how well the unit performed I expected great things from it on a larger diameter antenna and I wasn't disappointed.

For our consumer test the receiver and downconverter was hooked up to a 70° Hytek Millenium LNA, on a 10 foot Prodelin dish.

Initial setup was a bit tricky but the instruction book was very clear on how to go about it.

The instruction manual said to do the initial setup on odd and even transponders of Satcom 3 which I found to be a bit out of the ordinary considering Galaxy 1 is a lot hotter bird. There is a logical explanation why Satcom 3 is used to set up the receiver's polarities according to the manufacturer who said that because it is one of the weakest satellites it was used for the R&D that went into the prototype. That explains why it is a hot performer on Satcom 3.

The first units were single conversion receivers, but now the company is also manufacturing block conversion receivers which seems to be the trend in the industry.

The Video Plus 240 SD is a single conversion unit but we understand the new Video Plus block receiver even outperforms the original model.

It is a very straightforward simple low end receiver that retails for about $250, and while Electro-PAC plans to market the unit itself it is also entertaining the idea of manufacturing the unit for private label companies.

The receiver is a very stylish low profile unit with all the necessary knobs and switches on the front panel which include preset and tunable audio controls, plus format switch and detent tuning. I liked the bright LED step tuning channel readout, and the row of red and green function LED's. The unit also features a fine tuning control which snaps the video in very nicely and an LED (red) that lights when you have centered the tuning for optimum signal. In fact you don't even have to look at the TV set to tell if you have fine tuned the video correctly, all you have to do is look at the LRL (little red light) and it tells you when you have hit optimum signal strength.

On the rear of the receiver are two long knobs for setting horizontal and vertical polarity, and a cable length compensation knob. The cable compensation control works very nicely to optimize the video, but the polarity controls are a bit tricky. The manufacturer said that they would expect dealers to preset the polarities for their area so that all the consumer would have to do is turn the set on. However Mr. Kilian did admit that with the increasing popularity of packaged systems that the customer sets up themselves, the polarity set up may be a bit difficult although not impossible.

Part of the problem I experienced was that while the controls were quite long they were spaced very close together and for a man with big fingers it did get a bit hard to set the polarities right on the money. It took about 15 minutes to set them correctly, but once they were set they were set for what would seem to be forever.

The transponder tuning control steps through all the transponders sequentially and takes about 15 seconds to go from channel one to channel 24. The audio also does not cut off when changing transponders so you do hear a buzz with each channel click (pushbutton control by the way) out of the TV audio system, and if one channel is louder than another it can blast you out of the room. A minor inconvenience considering all the pluses of this receiver.

While the receiver features tunable audio 5.5 to 8.0 MHz it is rather course and does not tune in all the subcarriers. Some of the subcarriers sound very weak and the unit could also sprout a narrow/wide switch which the manufacturer said he may do on a later model which would help access more audio subcarriers. Again a minor point considering the audio for the video portion of the spectrum is excellent, and most people buy satellite systems to receive video with their audio not audio alone.

There are two RCA type female plugs for video and mono outputs and an "F" connector for direct hookup to your TV set. The receiver features an onboard RF modulator for channel 3 or 4. The other hookups on the rear panel are the 18VDC for the LNA/downconverter power and the IF input. The polarotation hookups are screw type terminal board for the 5VDC pulse type polarizor (Polarotor 1), and there is an extra spot for hooking up a voltmeter for even more accurate tuning during setup.

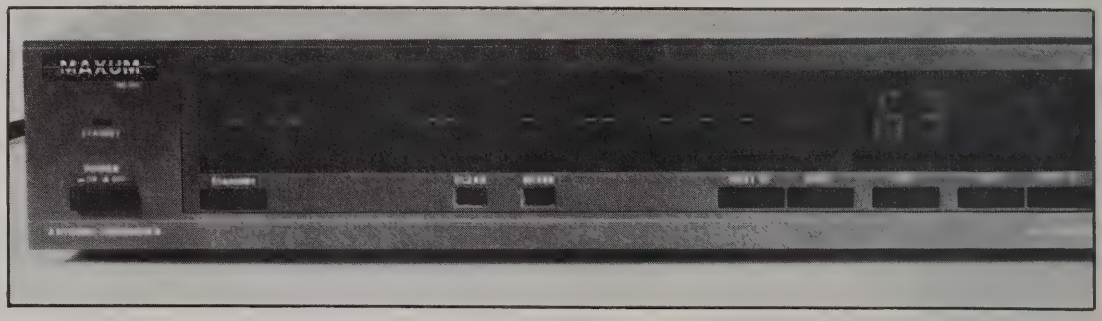
The Video Plus 240 SD ranks high on our list of low end basic receivers primarily for the video quality you would not normally expect from a basic unit. Right now we would regard the Video Plus as a sleeper and certainly one of the finest available in the $200 to $300 price range. If simplicity is what you want, and high performance is what you expect, the Video Plus receiver should fill the bill.

MAXUM 010

Back in the November, 1985 issue of *TV Satellite Videoworld,* we reviewed a really hot top-of-the-line but low-cost receiver, the MAXUM 011 That receiver comes in both a block and single-conversion format, and features full stereo sound, PLL digital tuning and display, *and infrared remote control of receiver functions.* About the only thing the receiver didn't boast was a fully-integrated antenna positioner system.

Well, look no more, for the new MAXUM 010 *plug-in* microprocessor-controlled matching antenna positioner and matching Von Weis motor drive unit is now available. And it works like a champ!

When we first got our hands on the 011 receiver, we noticed that hidden away on the left-hand side of its back panel were two special connectors cryptically marked "AUX." One was a standard DIN connector which we assumed would be compatable with other companies' antenna positioner products. Checking with Pentec, our assumption was confirmed that their stand-alone antenna positioner systems could be made to interface with the internal controls of the MAXUM receiver via this jack.



The other connector was a flat device of undesignated function.

Well, MAXUM has now delivered to us its new 010 antenna positioner system for product testing, and the mystery is solved. The 010 plugs into the 011 receiver with a short cable which snaps into this jack. And once connected, the receiver's hand-held infrared remote control unit will also control the antenna positioner as well as the receiver functions.

The MAXUM 010 Antenna Positioner is easy to install. The outdoor sealed Von Weis motor drive unit is a rugged device with pre-wired leads and fool-proof installation instructions. The indoor microprocessor controller connects to the outdoor motor unit via the standard 5-wire power and sensor lead cable. The connection to the 011 receiver consists of plugging in one cable.

To use the MAXUM 010, it needs to first be programmed with east and west antenna limits, and then stored with the desired satellite locations the positioner will select. These functions take just minutes, and can be performed from the hand-held controller and the front-panel controls.

In operation, the user obtains control of the 010 positioner by depressing the SAT command sequence on the hand held controller, followed by the satellite number desired. Up to 99 different satellite locations can be stored in the positioner's memory, more than adequate for any future expansion of satellites in the Clarke belt.

A very useful visual display of satellite location *and* antenna position is provided using a series of 60 LED's on the front panel of the positioner. As the antenna moves from one satellite to the next selected one, the desired satellite's green LED blinks to indicate its selection, and a red LED antenna position indicator moves visually through the satellite arc.

In addition to displaying the active movement of the dish and satellite being viewed, the on-air satellites which have been preprogrammed into the positioner's memory are also displayed. This presents quite a bit of useful antenna position information in a straight-forward easy-to-grasp visual format. Many is the time that this receiver has had to stick his head outside just to figure out where the dish was really pointing!

The MAXUM 010 can also be operated in a manual mode through its front-panel controls. Indeed, the 010 could be purchased as a low-cost add-on to any home satellite television system, using the positioner in its manual-movement mode alone. Plugged into the MAXUM 011 Receiver, however, the product really shines.

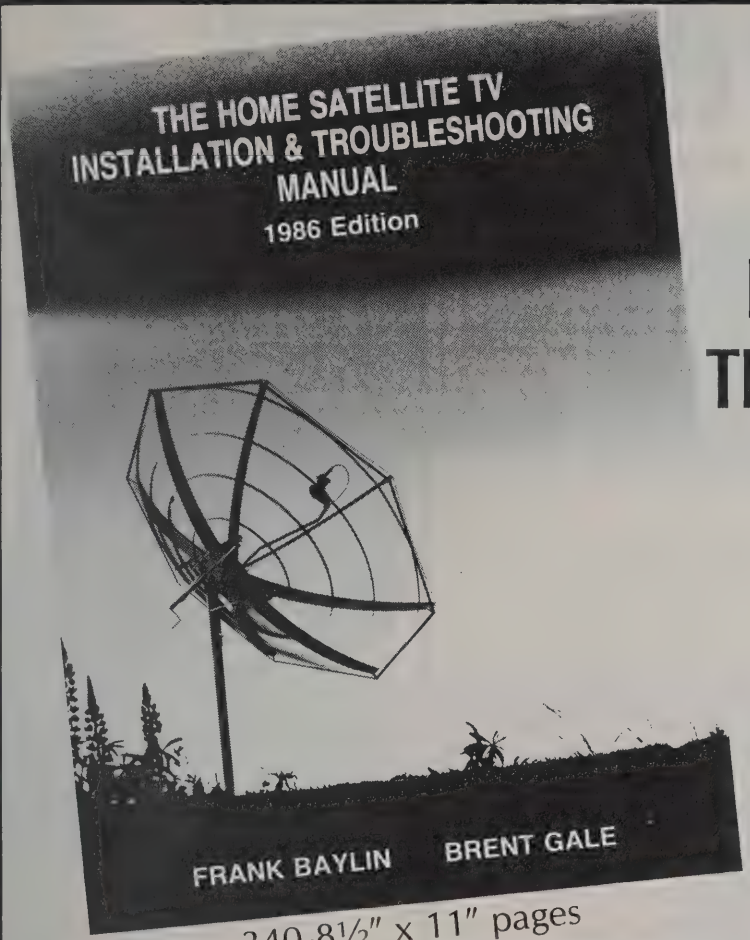
We installed our test unit on a friend's backyard 10 foot DH dish. Our installation of the complete system, including the outdoor unit, cable and indoor controller took under an hour.

We had previously run a set of motor control leads to our dish which we laid down the video cable feed to the receiver several months ago. The small extra expense of buying and burying another wire more than paid for itself by eliminating hours of redigging and reburying that otherwise would have been required when the antenna positioner was eventually added.

The unit performed flawlessly. The manual control of the motor drive is smooth and immediate, with none of the jerkyness that is characteristic of some other motor drives. The design of the case is sleek and smooth, blending in with the matching 011 receiver. The display was easy to read and understand, and the controls were easy to operate.

We would have liked to have seen the satellites accessable by name, and the SAT command sequence is a bit awkward, but these are minor details. We understand that MAXUM is planning to provide continual upgrading of the positioner with future plug-in IC EPROM memory chips which will expand the features of the system as time goes on, so we expect that satellite name access will be forthcoming before too long. This IC chip upgrade concept will guarantee that the positioner will never become obsolete as new consumer-friendly functions are introduced to the marketplace. A nice touch.

The MAXUM 011 receiver and matching 010 antenna positioner are available at many local dealers throughout the country, or may be ordered through Satellite Express at 800-824-7888, operator 150, for delivery anywhere in the US or Canada.



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Tap Into Tape

■ Yamaha Electronics Corp., well known for its high quality audio components, entered the video market earlier this year with the introduction of the YV-1000 VCR.

The new slim-line YV-1000 VCR is a front loading, table-top model with Yamaha audio quality and styling and includes many features most desired by serious audio-video enthusiasts. Features include Noise Reduction Circuitry and a double azimuth combination video head to ensure high picture quality and resolution.

Other video features of the Yamaha YV-1000 include a cable ready full 181-channel frequency synthesized electronic tuner with Multichannel Television Sound (MTS) and Seperate Audio Program (SAP), 14 day/8 event programmable timer with 60 minute memory backup, and full function infrared remote control. For convenience, the Yamaha YV-1000 unit employs an auto power-on system. When a cassette is loaded, the recorder turns on automatically. The cassette can also be ejected after the power has been turned off.

On The Road

■ The 6304 Porta-Mount, a portable system from Channel Master, brings satellite TV to apartment residents and vacationers.

Porta-Mount Model 6304 is a complete system which features a five foot black perforated dish, 70° LNA feed assembly, and Model 6138 satellite receiver. Quick-connect cables, a compass and complete instructions are also included.

The Porta-Mount ($895) can be used where no ground or roof mounted installation is required. According to the manufacturer, the system can be set up in 15 minutes or less. The dish and mount assembly fold down when not in use and the feed assembly is removable; thus making the system compact and portable.

The Model 6304 Porta-Mount is also suited for installation site surveys by satellite equipment dealers.

For additional information contact Channel Master, Division of Arnet, Inc., Box 1416, Smithfield, N.C. 27577, (919) 934-9711.

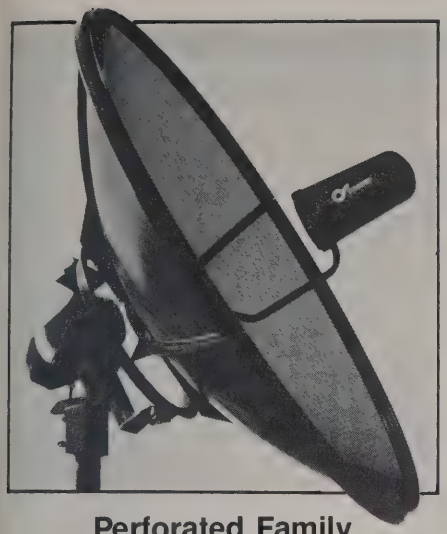
Free Booklet

■ "Everything You Need To Know About Home Satellite TV" is the title of a new 16-page booklet available free to consumers from Luxor North America Corp. It answers 78 of the questions most frequently asked about satellite television.

In describing the booklet, Hans Giner, president of Luxor, said "The satellite TV industry is reaching out to the general public like never before. While more than a million satellite TV receiving systems are in place, this represents only a small fraction of the millions of families who are potential satellite system owners. This booklet is Luxor's contribution to better public understanding of the benefits and basic functions of satellite TV receiving systems."

The question & answer booklet is organized into 7 sections under the headings: Getting Started, The Channels, "The Birds," Satellite TV Programming, The Dish, Satellite TV Receivers, and Tuning In. Simple diagrams and captions visually portray the basic operation of a home satellite TV system, the location of the Clarke satellite belt, and a typical satellite footprint.

To order a free copy contact Luxor North America Corp., 600-108th Avenue, N.E., Bellevue, WA 98004. Or telephone 1-800-245-9995.



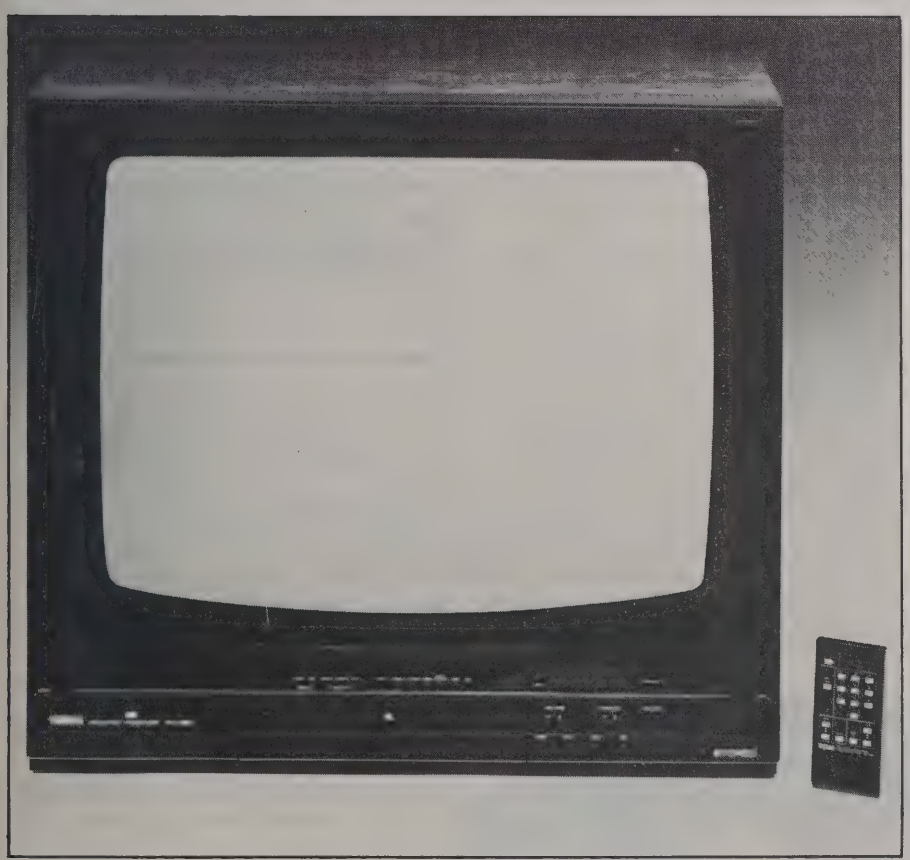
Perforated Family

■With the introduction of its 8' and 10' parceptor antennas (and re-engineered 12' paraceptor), Conifer Corporation now has three antenna sizes and three different receivers on the market.

The 8' and 10' Paraceptors are constructed of perforated aluminum while a unique aluminum mesh design is used on the 12' Paraceptor. Heavy mount and drive supports help retain accurate antenna shape and alignment under the most severe conditions and are designed for horizon-to-horizon polar mounts.

With a choice of receivers, Conifer now offers a total system approach to home satellite television. All Conifer receivers are scrambler-compatible; and the Model XT-200 is a stereo receiver with remote control, rapid scan tuning, automatic satellite switching & tracking and built-in antenna positioner.

Contact Conifer Corp., PO Box 1025, Burlington, Iowa, 52601 (319) 752-3607.



The Big Picture

■Yamaha Electronics Corp. has also entered the videomonitor field with the introduction of the YM-950, a 25-inch video monitor/receiver with stereo and remote control.

The 134-channel cable ready Yamaha YM-950 features a complete set of input and output jacks for quick connections and from an audio system, VCR, video disc player, game or computer. The YM-950 can handle two switchable video inputs and three video outputs. Each can have stereo audio. The YM-950 delivers a bright and sharp image from corner to corner, and the screen is glare-free even in a brightly lit room.

The unit is a complete stereo TV receiver with two built-in speakers and an independent amplifier for outboard speakers. The new Yamaha YM-950 monitor/receiver carries a suggested retail price of $950. See your local Yamaha dealer for more information.

Macro Micro

■The MicroMesh 10, from American Microcom Systems, Inc., is a four panel, all steel antenna that the manufacturer says is easy to install.

MicroMesh 10 features include .375 f/D ratio, 4 all steel panels finished with black matte enamel, sealed ribs to prevent corrosion and a total mount weight of 158 pounds.

The manufacturer claims installation time of 30 minutes or less and offers a 1 year full warranty.

Screen Gem

■Astro Industries has introduced the Astro 10.5 Screen Mesh Antenna. The Astro 10.5 was created to combine ease of installation with durability according to the manufacturer.

Constructed of aluminum spars, screen mesh petals, solid steel mount and cast aluminum center parts, the Astro 10.5 was designed for simplicity, optimum durability and long term stress considerations. The Astro 10.5 is UPS shippable and features a .3 f/D ratio with a gain of 40.1 dB. The Astro 10.5 is compatible with horizon-to-horizon motor drives and carries a full five year limited warranty.

For more information contact Allan Weltman, Satellite Sales, Inc., 6880 Alpha Park, Cleveland, Ohio, 44143, (216) 461-1000. •

DISHES BY MAIL

(Continued from page 40)

handle anyone who is saying they are an authorized Drake dealer."

The industry's leading trade association, SPACE, is beginning to take steps towards some sort of warning about shaky practices under the guise of mail order. Says Chuck Hewitt, executive vice president of the organization: "We are considering running a notice in magazines warning potential consumers about fraudulent practices. It's a new industry right now and some people are trying to take advantage of it."

Some of the mail order houses will also go to great lengths over the phone to make their sale. I made several calls to companies that responded to my letters, acting like a typical consumer. Misinformation, and sometimes outright lying, seemed to be the norm rather than the exception. One representative told me that they had a product in stock that hadn't even been unveiled by the manufacturer yet. Another condemned the practice of having a technician do the installation, saying that "They're only out to make a buck. These dishes are designed for home use, to be put in by the homeowner. An installer is just going to come in and charge a fortune."

Seasoned retailers have long complained about the mail order companies hurting the reputation of their stores. In the long run, however, it's you the consumer who becomes most turned off by bad air-mail practices. One consumer in Cleveland, Ohio, told me his own horror story about dealing with a less than reputable house. "I ordered a dish and had to get a money order to purchase it. Then it took about two months for it to arrive. Believe it or not, it took almost as long to install. I had problem after problem. Whenever I called the dealer who sent it to me, he said 'Send it to the manufacturer.' Finally I got a dealer around here to help me with it. I tell you one thing, I'll never get another one."

This kind of reaction is what industry observers fear most, that a few bad business practices can turn a customer against the entire industry.

The low pricing, which is usually the biggest carrot mailhouses use to lure customer also draws fire from industry veterans. Mike Koepke, a veteran dealer from Barrington, Ill., points out the trap door behind the slashed prices. "They offer these low prices, but what they don't tell you is a lot of times they don't send you a pole, or they offer a 120° LNA which costs virtually nothing now, or they make the dishes themselves. Many of these companies make the dishes out of garbage materials. That's why they can sell them so cheap."

The maturity of the industry has helped to naturally weed out many of the fly-by-night businesses. Stiff competition has also made a dent in mail-order companies who can't survive the normal costs and challenges of remaining competitive. The advent of mass merchants in the industry, where most homeowners buy the electronic product anyway, is also helping to eliminate the shadier companies.

If you do get the urge to purchase through the back of a magazine, still hoping you're in for some magic deal, remember the words from one mail order salesman who told me, "We can sell them cheaper because I don't have any overhead. I don't need any. I ship them and that's about it." Now even Santa, as busy as he is, takes more care than that. •

"Hang loose, buddy. We'll have you free in no time."

SUN BLIND!

(Continued from page 50)

from a few minutes to nearly 45 minutes.

While loss of video from the satellites can be annoying, particularly if the climax is about to be reached on a favorite movie or TV show, this direct alignment of the Sun with your dish can cause serious damage to the feed assembly which is located at the focal point of the dish. Remember all the tiny microwave signals are focused by the dish to a point at the feedhorn, and the sun will be focused in the same way causing intense heat build up at the feed assembly.

From about March 12 to March 18 the best way to avoid damage from a solar outage, particularly if your dish is a light colored solid dish, or has a metallic surface that is highly reflective, is to position the dish at the lowest angle so the afternoon and later afternoon sun will not be focused on the feed assembly. If you are home at the time of a solar outage you will notice that the TV picture will start to degrade (get a lot of snow in it) and you should immediately reposition the dish to a lower or higher angle away from the direct rays of the Sun. Mesh dishes, particularly black mesh dishes, have few problems with heat buildup caused by solar outages, but if you live in a southern region of the US they could also be damaged because of the intensity of the Sun in those regions.

Direct alignment of the sun with your dish can cause serious damage to the feed assembly which is located at the focal point of the dish.

So the best protection against solar outage damage is prevention. If you are going to be away from home during the day set the dish at the lowest possible satellite for your area and keep it there until the Sun is low on the horizon, then move it to a higher satellite. If you're home and notice the picture starting to get bad during this time of the year immediately move the dish away from the direct rays of the Sun. It could save you the loss of expensive components of your system. •

SPACE

Dedicated To Serving Its Membership

SPACE is coming of age! Now more than ever your association is ready to meet the needs of its members. We have taken a hard look at our membership programs listened very carefully to our members. As a result, SPACE expanded its programs to include:

- **Educational Program and Dealer Certification Courses**

  Through this program, a dealer can gain expertise in all areas of earth station installation and operation. The program is designed to increase the number of qualified dealers, enabling those dealers to advertise their expertise, thereby aiding consumers.

- **Standards Program**

  A committee comprised of industry experts will develop performance testing and measurement standards for earth station components which will help dealers in identifying performance levels of equipment of various manufacturers.

- **Statistics Program**

  This program has been developed to collect, aggregate and publish data on the earth station industry. This information will help members and industry representatives in their marketing and financial efforts.

- **Legislative and Legal Council**

  As always, SPACE attorneys stand ready to assist our members with legal problems. The Cable Telecommunications Act, which contains satellite viewing rights language, was recently signed into law by President Reagan. The Act reaffirms the legal right to manufacture, distribute and sell satellite earth stations, and the legal right of home owners to view unscrambled satellite delivered programming on their earth stations. The passage of this legislation is a milestone for the industry and wipes away the "pirate" image that has always confronted it. However, not all of the problems have been solved, and issues such as local zoning problems or how satellite delivered programming will be distributed are issues that continue to inhibit the growth of this industry, and are industry battles still to be fought.

- **Zoning Regulations**

  Zoning issues in all states will be monitored by a newly created task force. A data base describing zoning activities in each state is being established in order to provide immediate and up-to-date information and advice to dealers facing zoning problems. Additionally, a new publication on zoning issues which will supplement "The Satellite Earth Station Zoning Book" is being prepared to offer information and assistance to zoning boards in preparing ordinances on earth stations.

***Your membership funds help to support these programs. Help your industry grow in these and many more important areas.**

Please check which membership category you are joining under:

	CATEGORY	DUES
_____	**PIONEER**	**$500.00 a month**

SPACE Pioneers are those members who are primarily involved as a manufacturer, distributor or as a dealer in the satellite earth station industry. These members are recognized as the most powerful elements in the association, and they receive benefits such as early exhibitor mailings prior to trade show sign up and industry recognition.

_____ **AFFILIATE PIONEER** **$300.00 a month**

Affiliate Pioneers are suppliers, publishers, vendors, etc. who wish to participate fully in SPACE but do not fulfill the criteria for SPACE's primary membership category, Pioneers. This membership allows for full recognition and participation, with the exception of voting privileges and Board participation.

PRIVATE CABLE **$750.00 a year**

_____ This membership category includes private cable operators or owners of private cable systems.

_____ **DISTRIBUTOR** **$500.00 a year**

This membership category includes distributors of satellite earth station equipment.

_____ **AFFILIATE COMPANY** **$500.00 a year**

This membership category allows participation in the association by manufacturers, publishers, suppliers and general supporters who are not inclined to belong at the Pioneer level. This category provides a medium through which they can support their industry, with the exception of voting privileges and Board participation.

_____ **DEALER** **$95.00 a year**

This membership category includes dealers of satellite earth station equipment.

_____ **CONSUMER** **$35.00 a year**

Consumers are owners of backyard earth stations who wish to support the aims of SPACE,or any individual who wants to support SPACE through a yearly contribution.

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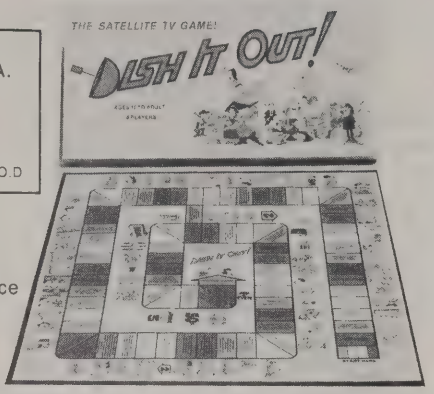

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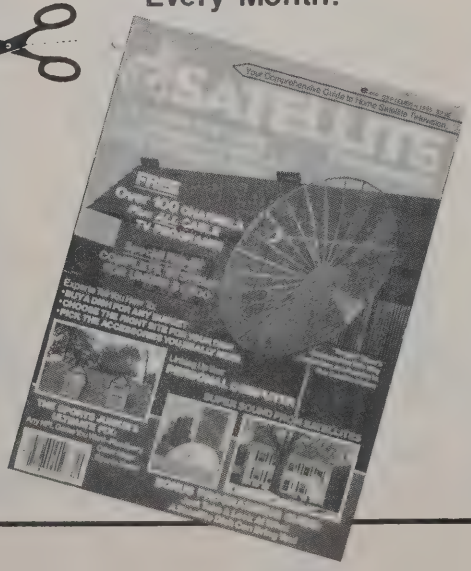

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PROCESSORS

(Continued from page 38)

out of business. Another two are modifying their product in hopes of winning FCC approval eventually, two more are petitioning the agency for rulemaking which they hope will lead to some sort of accomodation for flea-powered home transmitters, and the FCC has taken one to court. Reed says he doesn't know how many of the units were sold before the FCC clampdown, but trade estimates put it at somewhere between 8000 and 10,000. The FCC's real concern, according to Reed, is that imports from Korea, Taiwan, Hong Kong and Japan could flood the country. The agency has had requests from manufacturers in all of these countries, he said, and one of the original producers was based in Canada. At the recently-concluded Japan Electronics Show, Konica and other manufacturers showed clip-on retransmitters for their video cameras, converting the units into cordless portables.

Retransmitters of this type are not outlawed around the world. Visitors to Tokyo, Hong Kong and other Far East ports may find them openly on sale; and many nations in the mideast have no objection to their use. In Europe, acceptance varies from country to country and depends on the amount of radiation from individual units.

As it happens, the Hawkeye isn't the only signal distribution unit not covered by the FCC notice. At least three rely on wiring rather than over-the-air transmission. The Rabbit was a $99 transmit/recieve system which used house wiring to carry both the audio/video and command signals. The FCC nixed it before the company was able to get a single unit to market, and Rabbit engineers returned to the drawing board to try again with a thin-wire transmission system. Apparently the FCC said no again, for a third version is now in the works, and the company isn't talking about it.

Channel Plus can accept inputs from three program sources (VCR, TRVO, videodisc player, video camera, video game or cable box) and the user at any remote location changes programs simply by changing channels. The unit, which is inserted in any multiple-TV system immediately before the first signal splitter, accepts inputs from a rooftop antenna and up to three auxiliary sources. Each is retransmitted via existing coaxial cable to all of the TV receivers in the system on a separate UHF channel, enabling the viewer at a remote location to select his program source simply by changing channels. It still is necessary to return to the base video component to switch on or off, adjust signal or change channel.

However, a $49.95 accessory from Radio Shack or $95 system from Revox eliminate even the trip back to the program source. Both consist of an infrared transceiver which relays instructions to an infrared video component like a satellite receiver or VCR from a handheld transmitter in another room. In the case of the Archer Video Remote Control Extender, the remote transmitter is actually the handheld control for the TVRO receiver or VCR, while the Revox supplies its own keypad.

Video Link's MRTV system combines both the signal distribution and control functions in a single modular package. Its control unit has inputs for four signals and outputs to three TV receivers, all connected to the unit by coaxial cable. The remote control switcher makes it possible to change channels or programs from a remote location and for two or more sets in the system to be tuned to different program sources.

Luxor offers a remote control system comparable to Radio Shack's but dedicated to the Mark 2 satellite receiver, for $90. The Auxiliary Remote Sensor placed near a secondary TV set relays commands to a module at the Mark 2 and is actuated by the Mark 2's remote control pad.

So what happens if you've already gotten stuck with one of the FCC's no-nos? Can you continue to use it? Can you return it to the dealer or manufacturer where you bought it? Is there a chance the FCC may change its mind (as it did on TVROs in the first place, or on CB radio) and approve it at some future date?

Reed answers the last with an emphatic no. There are important differences between these devices and TVROs or CB radios, he declares, differences which are too great to be papered over by an administrative change of mind. Besides, he argues, those decisions came about because the numbers of users simply got too large to declare them all outlaws. That's not going to happen with the retransmitters, he says, because the FCC plans to nip them in the bud.

If you've already got a unit, Reed cautions against continuing to use it. "We're not likely to send in the marshalls and begin making arrests," he says, "but if we catch you, we will issue a strong warning. No fine or jail term the first time, probably, "but if there are repeated complaints, we're certainly going to take some action." Reed says the Feds want to persuade rather than coerce, but they will consider prosecution in flagrant or repeat cases. If you want your money back, he adds, you have a right to demand it from the merchant who sold it to you. Reed says he had no right to do so in the first place, since the product is and always has been illegal. And if the dealer wants his money back, it's up to him to get it from the manufacturer or his agent.

If you're tempted to bring back the Konica or one of the other transmitters being sold legally overseas, Reed advises against it. Customs agents have the authority to seize it if they find it in your luggage, and even if you manage to get it home, you'll have to give it up if federal agents catch you using it. And how are you likely to get caught? Not so much by snooping F-Men, but by complaints from your neighbors that you're interfering with their TV or FM or CB reception. •

"Harold claims he can drink seven beers, then watch a scrambled program without a decoder."

RONNIE MILSAP

(Continued from page 60)

around singing gospel music at church, and listening to an old battery radio.

"We'd stretch the antenna all the way up the side of the mountain, and we could pick up Knoxville and Nashville," he recalls. "I'd listen to the Grand Ole Opry and think, 'Wow, wouldn't it be great just to be there?' That radio was my link to the outside world."

At the age of six, young Ronnie was sent 400 miles away to the Governor Morehead School for the Blind, in Raleigh. Although it meant going home only for Christmas and summer vacations for the next 12 years, Milsap says the school was "the best thing that ever happened to me." There, he started studying violin at seven, moving to keyboards, woodwinds and guitar at 12. Despite his appreciation for the classics, Milsap still loved the music he'd heard on the old Philco, and his instructors were often dismayed to hear him practicing Elvis and Jerry Lee Lewis instead of the requisite Beethoven and Mozart. But a teacher named Wallace Greaves proved to be a friend as well as a lifelong inspiration.

"He was very strong in trying to help young blind students reach their potential, and to realize that doors weren't going to open for us—that we had to work hard and open them for ourselves." As a result, Milsap says, "my drive and ambition was stronger than my handicap."

After graduation, Milsap entered Young Harris Junior College in Georgia, where he met a blond secretary named Joyce Reeves. The two were married in 1965, and several years later, had a son, Todd, now 16. "My family, my fans, and my music are the three most important things in my life—in that order," Milsap says.

For a while, however, Milsap wasn't sure whether he intended to pursue music or law as a career. He was trying to make up his mind, imitating his favorite performers, when he attended a Ray Charles concert.

"A friend of mine got me back stage to meet Ray in his dressing room," he remembers, "and when my friend introduced me, he said, 'This guy, Ray—you won't believe it—he sings just like you!' And Ray turned to me and said, 'In all due respect, Ronnie, don't sing like Ray. Sing like Ronnie.' I was, like, 19 or 20 years old, and for a split second, I thought, 'What a you-know-what! It ought to be a real compliment to him.' Later, of course, I knew he was telling me to try to find myself and my own style of entertaining people. Looking back, it was probably the best piece of advice I got in the beginning."

About the same time he was admitted to law school at Emory University, Milsap got a recording contract in Memphis. During the day, he worked as a session player (appearing on several Elvis Presley records), and at night he sang rock and soul at a local nightclub. Somewhere in between he tried to make hit records. But nothing was really happening for him, and when he'd come home nights and listen to country music, he realized he belonged in Nashville. A court battle with the nightclub owner—in which he lost his house—cinched the move.

"It was the low point in my life, but realizing that I was gonna be able to sing country music made me so happy that all the negative things didn't really matter," he says.

He's got 16 televisions throughout his house—all hooked up to the dish—and 16 video machines.

Ironically, many of Milsap's biggest hit records—"It Was Almost Like a Song," "Smoky Mountain Rain," "(There's) No Gettin' Over Me," "I Wouldn't Have Missed it for the World," "Any Day Now," "Stranger in My House"—leaned more toward pop music than country, and in fact "crossed over" onto the pop charts.

But Milsap says the crossover success was never intentional on his part, insisting "I just try to cut good songs." In the next breath, however, he says he wants to reach as many people as possible, all around the world. And his latest records, which contain little of the country feel of his early work, reflect both his love for old rock and roll and his somewhat worshipful admiration of schlock singer Barry Manilow. His most blatant attempt to enter the rock market, "She Loves My Car," a smooth, impeccably-produced and very L.A.-sounding single, did not sell as expected.

To his credit, Milsap is both a versatile craftsman capable of handling all facets of popular music with ease, and an astute businessman, able to identify commercial trends, such as the importance of music videos—he currently has a compilation cassette with seven of his music videos on it—long before most of his country peers. He has shrewdly avoided the ruts that many singers fall into, and if, as he admits, he can sing so many different sytles—country, pop, blues and rock—with so many different shadings that "it's kind of hard, I guess, to sometimes identify the voice with the song," he is a steady record seller in a time of depressed sales.

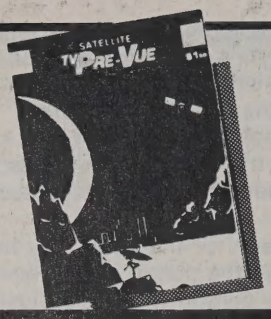
One reason for the latter may be the fact that the public perceives him as a happy person who sings positive songs.

"Yeah, it *is* accurate to say that I'm a happy person, and a lot of my songs reflect that," he agrees. "Earlier in my career, I was doing 'Pure Love,' 'I'm a Stand By My Woman Man,' 'I'm Having Daydreams About Night Things,' and all those happy songs, and I still do a lot of those. But I'm a happy person. My life is in order. I don't have marriage failures, I don't have economic bankruptcy, or serious problems like that, and there's a reason for it. I *work* at making sure things go well. I plan for it. I surround myself with people I love to be with, I enjoy the work, I have fun, and hell, I enjoy livin', you know?

"Sometimes I go on talk shows," he continues, his voice growing tense, "and I get the feeling it's almost boring because I don't have any real awful things to talk about, or any real dreadful things that have happened in my life. So if people think I'm a happy person, it's because I am."

The comment—and the agitation—refer to an appearance Milsap once made on the "Merv Griffin Show," during which Griffin tried to get him to talk emotionally about his blindness—something Milsap refuses to do. Nonetheless, he acknowledges that he has overcome a multitude of disadvantages, and opened more doors than Wallace Greaves probably ever envisioned.

"I really had doubts for a long time that I'd be able to be a recording artist, to be able to be a country singer, or even be able to do interviews like this," he says in a quiet moment. "These kinds of things, I've got to tell you, are dreams I never thought of. I didn't know they were really attainable, because coming out of the Smoky Mountains, and my country music background, and goin' to school at Governor Morehead for the Blind there in Raleigh, well, it's a long way from there to where I am today. And there have been so many people who are responsible for what I do, who gave me a helping hand and made my life really beautiful. More things have happened to me than I ever imagined," he says, shaking his head. "I just never thought I'd be this far along."



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SCOOPS

(Continued from page 18)

which would process a package consisting of Showtime/The Movie Channel and HBO, with perhaps as many as 20 advertiser-supported satellite channels thrown in. Under the plan, dish owners would pay $24 to $30 per month for the programming, roughly what a cable subscriber might pay for the same package.

TCI already has ordered its local cable systems to survey dish ownership in their franchise areas, as the first step in determining the feasibility of such a program. At least some local satellite antenna dealers around the country don't seem overly worried about the new found competition. "The cable companies have spent 30 years building up ill-will in Pennsylvania," says William Bowersox, a Central Pennsylvania dealer. "More recently, they've moved heaven and earth to throw off any controls at all on what they can and can't do, and what rates they can charge, and people are sick of it." Bowersox adds, "If the cable companies get into the dish business, it will give us all a shot in the arm. For years they've been telling us that what we were doing was illegal and calling our customers pirates. Now they're saying, 'okay, it's all right to own a dish, and you should buy it from us.'"

Shakers And Movers

Among new or recent additions to the satellite program spectrum are five new channels on Satcom F3 and F4 plus a new channel for the Home Shopping Network and moves for American Extasy and EWTN.

Joining the lineup of sports and evangelical channels on F4 are HSN's new feed at Transponder 1 (the existing feed on F3 Transponder 22 continues); the C.O.M.B. Value Network afternoons on Transponder 2; The Heartbeat Network, splitting Transponder 12 with the Playboy Channel; Success 'n' Life (SNL), like Heartbeat, another religious satcaster, 'round the clock on Transponder 15; and Prime Ticket, a Los Angeles-based premium sportscaster, on Transponder 20. Open Net, a North Carolina public affairs program, will operate Friday nights on Satcom 3's Transponder 5.

The moves see EWTN drop from Satcom 3's Transponder 18 to Transponder 12; and American Extasy from Telstar T3's Transponder 19 to Transponder 18. The unscrambled adult movie channel is asking viewers voluntarily to cough up membership fees of $6 per month or $30 per year in lieu of scrambling. Its programs presently are supported by sponsors who sell adult films and novelties, and by its own mail-order organization.

If American Extasy holds out against the current trend to scrambling, and if the new shop-at-home and religious channels join comparable older services who value the home satellite audience above their relations with cable systems, the total number of channels which can be expected never to scramble rises to 35, more than one-third of the total number of scheduled channels. Among the others I don't ever see scrambling: the 3 1/2 PBS channels on Westar 4; the Canadian Broadcasting Corporation channels, four in all, on Anik D; the Morelos channels (4); C-SPAN and the two Canadian Parliamentary channels; most of the religious channels; several of the premium sports channels (because of the cost of providing decoders to affiliates); the shopping channels and channels serving the deaf, farmers and certain other specialized groups.

Robert Angus is senior editor of **Video Review Magazine** *and video columnist for the* **Chicago Sun-Times.**

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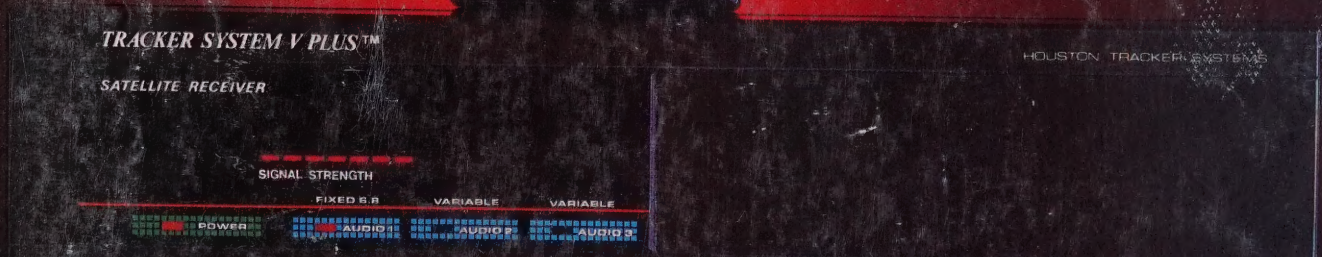

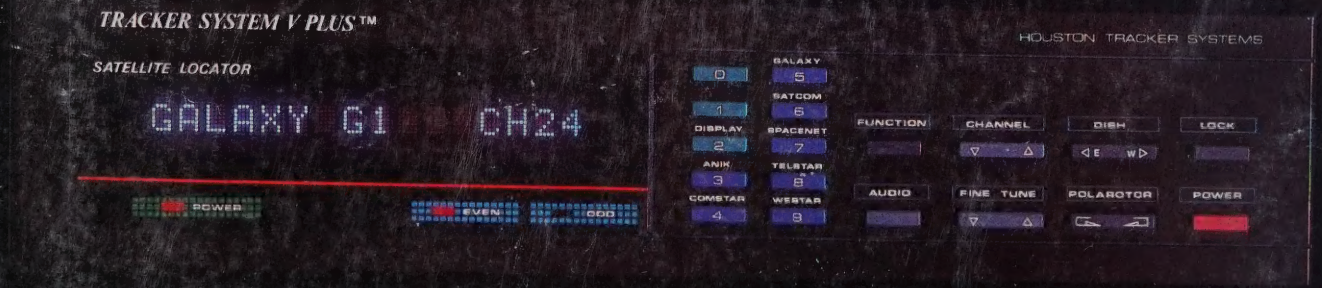

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